Comp/Set®

program 23

Program 23 is a major advance in the productive power and capability of Comp/Set systems. Available as a low-cost option on all new and existing Comp/Set Series 3500 and 4500 phototypesetters and on Video Display Inputs, Program 23 brings machine power to 32K and makes the machines fully programmable. Thus as new program features are developed, they can be added at nominal cost through a new program diskette.

Program 23 consists of two main program modules. The *edit/scroll module* is completely new and includes powerful text management features. The *counting program module* is basically similar to that of previous Comp/Set programs, but also includes new *automatic hyphenation capability.* Both program modules are on the Program 23 program diskette; either one is brought into use in just a few seconds.

ADDRESSOGRAPH MULTIGRAPH

VARITYPER DIVISION

To assure that your Comp/Set phototypesetting system completely meets your needs, now and in the future, there are skilled personnel at local AM offices across the United States who are ready to serve you promptly with operator training, maintenance, supplies, and parts.

Akron, Ohio
Albany, N.Y.
Albuquerque, N.M.
Altoona, Pa.
Anaheim, Cal.
Anchorage, Alaska
Atlanta, Ga.
Austin, Texas
Baltimore, Md.
Biminghamton, N.Y.
Birmingham, Ala.
Boise, Idaho
Boston, Mass.
Bridgeport, Conn.
Buffalo, N.Y.
Charleston, W.Va.
Charlotte, N.C.
Chattanooga, Tenn.
Chicago, Ill.
Cincinnati, Ohio
Cleveland, Ohio
Columbia, S.C.
Columbus, Ohio
Dallas, Texas
Dayton, Ohio
Denver, Colo.
Des Moines, Iowa
Detroit, Mich.
El Paso, Texas
Erie, Pa.
Evansville, Ind.
Fargo, N.D.
Flint, Mich.
Ft Wayne, Ind.
Grand Rapids, Mich.
Green Bay, Wisc.
Greensboro, N.C.
Harrisburg, Pa.
Hartford, Conn.
Hato Rey, P.R.
Honolulu, Hawaii
Houston, Texas
Indianapolis, Ind.
Jacksonville, Fla.
Kansas City, Mo.
Knoxville, Tenn.
Lansing, Mich.
Lexington, Ky.
Little Rock, Ark.
Los Angeles, Cal.
Louisville, Ky.
Lubbock, Texas
Memphis, Tenn.
Miami, Fla.
Milwaukee, Wisc.
Mobile, Ala.
Mountainside, N.J.
Nashville, Tenn.
New York, N.Y.
New Orleans, La.
Oklahoma City, Okla.
Omaha, Neb.
Orlando, Fla.
Peoria, Ill.
Philadelphia, Pa.
Phoenix, Ariz.
Pittsburgh, Pa.
Portland, Ore.
Providence, R.I.
Reading, Pa.
Richmond, Va.
Rochester, N.Y.
Sacramento, Cal.
Salt Lake City, Utah
San Antonio, Texas
San Diego, Cal.
San Francisco, Cal.
Savannah, Ga.
Seattle, Wash.
Spokane, Wash.
Springfield, Mass.
St. Louis, Mo.
St. Paul, Minn.
Syracuse, N.Y.
Toledo, Ohio
Tulsa, Okla.
Washington, D.C.
Woodbury, N.Y.
Youngstown, Ohio

ADDRESSOGRAPH MULTIGRAPH
VARITYPER DIVISION
®
11 MT. PLEASANT AVENUE • EAST HANOVER, NEW JERSEY 07936

483

Composed on a Comp/Set phototypesetter. Litho in U.S.A.

balanced typesetting power

The outstanding "front-end" power of Comp/Set Program 23 is matched by the typesetting power and versatility of the Comp/Set phototypesetter with up to 16 on-line type styles and up to 70 on-line type sizes—a massive total of 1,120 type fonts on-line for instant selection for every typographic requirement.

The edit/scroll program module adds significant new functions to permit highly efficient editing, correcting, and manipulating of copy that is stored on magnetic diskettes (or paper tape), as well as of copy currently in the input stage. Working in non-counting mode, the screen displays eight lines of 64 characters each from its scrolling memory of up to 12,000 characters.

Scrolling in either direction gives almost instant access to any point in the entire 12,000 character file, with scrolling speed variable under operator control. Scrolling can also be a-line-at-a-time, eight lines at a time, or the operator can instantly return to the beginning or end of the job.

Editing functions are under complete operator control, and include *delete, replace, insert, move,* and *store* of any unit of copy from a single character to a word, line, sentence, paragraph, or even entire blocks of up to 8,000 characters. The operator can move the cursor left, right, up, or down through the entire screen. All editing operations are displayed immediately on-screen, with appropriate functions displayed in the function field to permit verification by the operator. When editing is completed, the file is returned to the diskette (or tape) for storage until it is to be run in the photo unit.

Block move permits blocks of any size up to 8,000 characters to be moved to any new location in the job. The operator defines the block by placing the cursor on the first character of the block, then the last, sending it to memory. It is called from memory on demand and inserted in the new location for easy reassembly of jobs in new sequence.

High-speed search permits the operator to quickly and automatically locate any point in a job at which a change or editing function is to take place. The "search tag" of up to 30 characters is displayed in the function field, and automatic search stops when the "tagged" copy appears in the body of the screen.

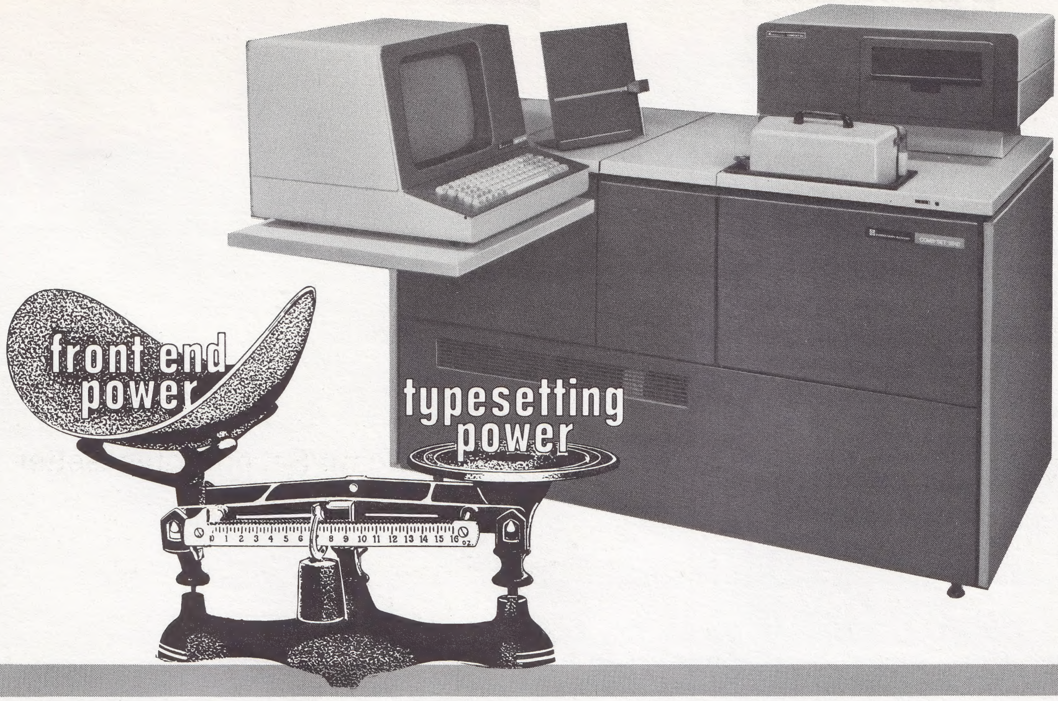
Global search and replace further expands and automates the search function to permit the operator to specify the 30-character "search tag" plus the correction or change which is to be automatically made. The new copy is accessed from memory an can be any length up to 8,000 characters. Changes that are to take place many times through a job can be specified once, and executed throughout the job from a single command in a matter of seconds.

Programmable memory of up to 8,000 characters permits storage of up to 99 segments or blocks of alphanumerics and/or commands. Blocks can be any length within the total 8,000 character programmable memory capacity. Any stored copy can be instantly recalled to the screen and inserted at any specified point in the job.

Translate capability permits complete diskette interchangeability between Comp/Set units equipped with Program 23 and other Comp/Set units that are equipped with the same or other, earlier programs. This permits economical system expansion while avoiding obsolescence of existing equipment.

The resident file directory, upon command, displays the file letter and first 62 characters of each file on the diskette, eight files at a time. The operator can scroll through the directory eight lines at a time, and upon command, can view any selected file 500 characters at a time. The file directory can be called up at any time, even while a job is being edited and corrected; upon completion of viewing of the directory, the operator can return to the same point in the job that was in progress.

Comp/Set and *Amtrol* are registered trademarks
of the Addressograph Multigraph Corporation.



The counting program module now offers three justification methods to permit you to fit the method to the characteristics of the job at hand. It provides complete, programmable control over the word spacing and letterspacing parameters within which the *Amtrol® II* microprocessor instantly performs all calculations to produce perfectly justified copy.

In *manual mode,* the operator retains full control for line-ending and hyphenation decisions. Many users who prefer to rely on the typographic judgement of the experienced operator use this method.

In *automatic mode,* line-endings take place automatically when the prescribed parameters have been satisfied. When a long word falling at the end of a line makes justification impossible, the system calls for operator intervention for a hyphenation decision. This method provides the benefits of highest inputting speed while keeping control of hyphenation in the hands of the operator.

Hyphenation mode places hyphenation decisions under control of the system's intelligence with the Comp/Set hyphenation routine. A high level of accuracy is assured, while the operator performs at maximum keyboard speed. The operator can preprogram 13 variable rules relating to hyphenation standards. *Discretionary hyphenation* and *programmable exception learning dictionary* further increase accuracy by permitting the operator to prescribe the exact hyphenation in certain words in which any variation would be unacceptable, such as in scientific or technical work; in words in which any hyphenation is prohibited, that, too, can be programmed by the operator.

ragged copy The Comp/Set system provides y setting of ragged left, right, or centered copy in *manual, automatic,* or *hyphenation mode,* with the parameters specified by the operator.

indents from left, right, or both sides are precisely controlled in increments of 1-point or 1-unit to accurately compose outline jobs with multiple indents, complex run-arounds, etc. Recurring indents can be stored and accessed by simple command.

automatic search The high-speed, automatic search feature speeds and simplifies editing and correcting of previously composed copy. A "search tag" of up to five characters is entered and appears in the function field. The system automatically searches through the copy at high speed, stopping when the "tagged" copy appears in the body of the screen.

tab/data storage simplifies many operations at the same time it expands the system's capability. The operator can employ any combination of *tab* and *data storage* within the total of 99 variable storage areas, and within the total of 750 codes.

tab storage provides easy entry and storage of up to 99 tab memories (tab columns) including all repetitive alphanumerics and necessary commands such as column width, type style and size, quadding, etc. A *tab index system* provides for simultaneous storage of many different tabular formats, with any of them accessed by a simple command.

data storage provides similar capability for storage of non-tabular alphanumerics and commands in up to 99 data segments of any length within the total 750 code capacity. Major gains in production efficiency and accuracy stem from this feature which eliminates much repetitive keyboarding through instant recall of any stored data segment by a simple keyboard command.

table of contents

Page(s)

Introduction 3
Tab/Data Description 3
Keyboard Changes 3
Operating Instructions 5
Setting Up Tabs 5
Verifying What You Typed 7
Correcting Tab Memories 7
Accessing Tabs 7
Overriding a Stored Tab 7
Tab Indexing 7
Storing Data 8
Setting Up Data Area 8
Verifying What You Typed 10
Correcting Data Memories 10
Accessing Data 10
Using Stored Data and Stored Tabs Together 10
Overflowing the Memory 11
Tab and Data Examples 12

introduction

The powerful tab/data storage module adds a greater versatility to your Comp/Set phototypesetter. Repetitive information—whether functions for tabs or repetitive copy—can all be stored in a memory area in the typesetter and called out as you need them.

If your Comp/Set phototypesetter also has a record/playback option, the tab/data storage module adds even greater flexibility for you to record and update lengthy tab jobs.

This module can be added to all Comp/Set 3500 series phototypesetters and reduces your typing time while it increases your accuracy.

Tab/Data Description

The tab/data module modifies the memory of your typesetter. Extra storage is available for you to:

- Set up to 99 different tab memories. All tab jobs become a simple tab-type-tab-type operation. A complete tab indexing system allows you to store many different tab layouts at one time and call them out as needed. Unlimited kinds of information can be stored in each tab including all the functions and repetitive text.
- Set up to 99 different data blocks of repetitive copy. Frequently used logos, pi characters, or typographic borders, or virtually any part of a job can be stored in the typesetter's memory. Once stored, you can call out the information with a simple command.

Keyboard Changes

With the tab/data module, additional keys are operational on the 3500 keyboard.

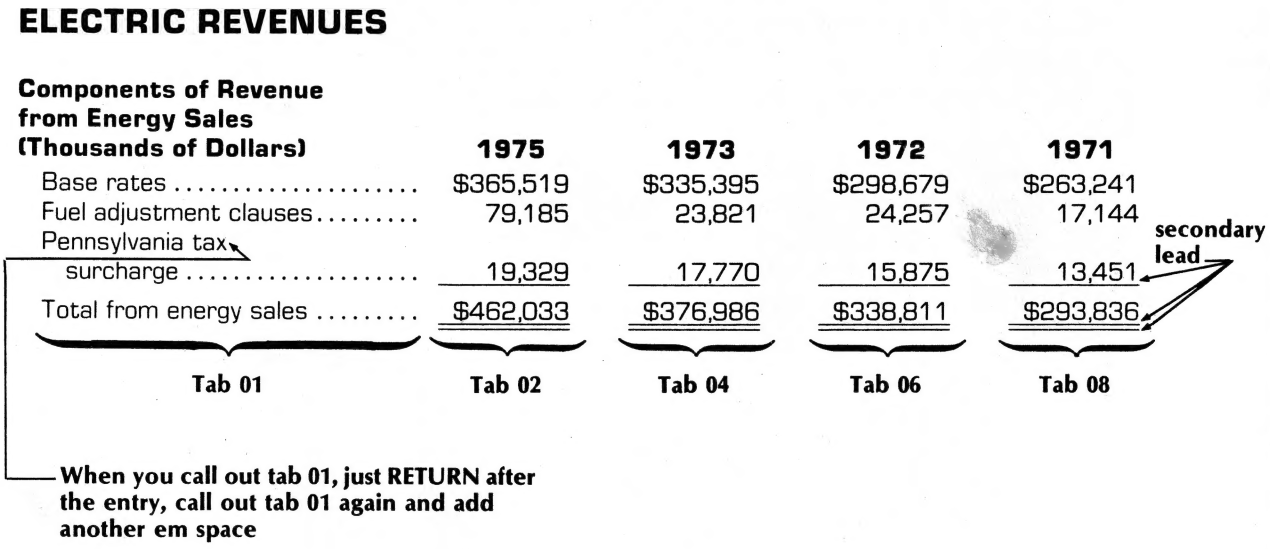
- The DATA key, located on the lower left side of the space bar, is used to store and call out data.
- MEMORY, READ and SEARCH are used with the record/playback options. You may or may not have these options. If you don't these keys become inoperable.

The typewritten copy

ELECTRIC REVENUES

Components of Revenue from Energy Sales (Thousands of Dollars)	1975	1973	1972	1971
Base rates...........	$363,519	$335,395	$298,679	$263,241
Fuel adjustment clauses.............	79,185	23,821	24,257	17,144
Pennsylvania tax surcharge...........	19,329	17,770	15,875	13,451
Total from energy sales...........	$462,033	$376,986	$338,811	$293,836

The finished job



ELECTRIC REVENUES

Components of Revenue from Energy Sales (Thousands of Dollars)	**1975**	**1973**	**1972**	**1971**
Base rates	$365,519	$335,395	$298,679	$263,241
Fuel adjustment clauses.........	79,185	23,821	24,257	17,144
Pennsylvania tax surcharge	19,329	17,770	15,875	13,451
Total from energy sales	$462,033	$376,986	$338,811	$293,836

When you call out tab 01, just RETURN after the entry, call out tab 01 again and add another em space

There are many ways you can plan this job. This is just one.

There are eight tab columns to plan for. The first column includes space for the end of that column. Tabs 02, 04, 06 and 08 are the tab columns for the numeric entries and tabs 03, 05, 07 are the blank space between each column.

To set the headings, call out tab 01, single erase the em space then type the new font instruction. At the year heading, add a center command for each column.

operating instructions

The tab/data storage option gives you up to 99 separate tab memories that will assist you in keyboarding any kind of columnar work. With it, you can store the function commands for each column separately then call them out as you need them. You can store virtually any combination of characters and fixed spaces up to a maximum of 750 characters.

Setting Up Tabs

To store information in tab memory:

1. Mark up the tab job copy using a Comp/Set layout form. A pad of these forms is included in the Operator Aids section of this manual.
2. Set up the function field and put the typesetter in the manual mode by pressing **control m**.
3. Clear the tab memory area by pressing **control tab** followed by the digits **00** and **word erase**. This clears all tab and data storages.
4. Store the first tab by pressing **control tab** and the digits **01**. (01 through 99 are available) Then type the information for that tab column.

   Notice that a marker appears next to the ACL in the function field. This marker indicates that you are working with the tab/data storage option—either clearing the storage area, storing new tab/data memories, adding tab/data memories or correcting existing storage areas.

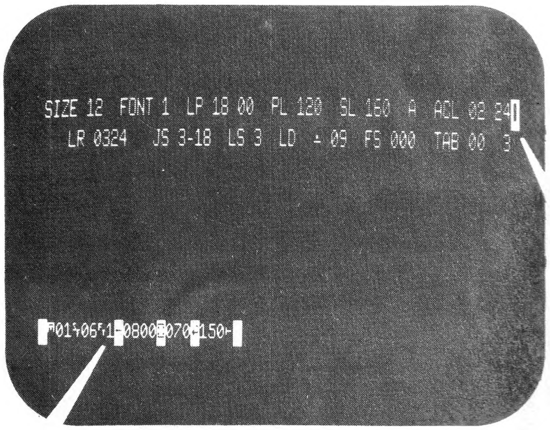
   You can store size, font, line length, flush left, flush right, center commands as well as repetitive copy in a tab column. The information displays on the typing line as you keyboard it. You can check to be sure the information is correct before you store the tab. If you see a mistake, correct it by using **single erase** (only use the single erase key to correct tab memories).

   Type a **tab** to end that segment when you are satisfied that the information is correct. The information moves up on the screen and is stored in memory.
5. Store the second tab by pressing **control tab 02**. The information in tab 01 goes off the screen. Type the information for tab 02 and press **tab**.
6. Repeat step five increasing the tab numbers by one as you type and store the information for each tab column.
7. After the last tab is stored, press **return** to complete the storing procedure.

Hints: As you plan a tab job, look for the most commonly used parameters of each column, and store this in the tab number. Occasional changes, e.g., a heading, are not common, so don't plan the tab column around these words.

The example on page 4 is a typical tab job. Your markup on a Comp/Set layout form should look like the Comp/Set layout on page 6.

The title and headings are not common to the job since they only appear once. As you keyboard the job, you can override the stored tab memory for a line (refer to Overriding a Stored Tab).



```
SIZE 12  FONT 1  LP 18 00  PL 120  SL 160  A  ACL 02 24
  LR 0324   JS 3-18  LS 3  LD + 09  FS 000  TAB 00  3

01 06 1 0800 070 150
```

When you store a tab in memory, the information displays on the screen as you keyboard it. A marker displays next to the ACL.

Date Received: 8/16/76

Comp/Set Layout Form

Date Due: ASAP

Job Title: ELECTRIC REVENUES - FINANCIAL CHART

Operator: NZ

Disc No.: 046

Format: Job

Jsp. Min. / Max.: 3 -18

Lsp.: 3

Ldr. / Width: $\dot{-}$ 09

Fixed Space: 000

	Size	Font	Line Length	Primary Leading	Secondary Leading	Mode A	Mode M	Other Information
TAB 01	09	1	2000	110	020		✓	$\boxed{M}$ ⊢
02			0400					⊣
03			0200					
04			0400					⊣
05			0200					
06			0400					⊣
07			0200					
08			0400					⊣

If checked ☐ see additional information on reverse side

FORM VT2955 – 4/75

Page ____ of ____

Verifying What You Typed

When you finish typing and storing tabs, check to be sure they are correct by pressing **tab**. All the information stored in tab 01 displays on the screen. If you missed a correction as you keyboarded, you can check this tab again to be sure it's correct. Press **tab** again. The information in tab 02 displays on the screen. Keep pressing **tab** and checking the information until all your tabs are checked, then press **return**.

Correcting Tab Memories

If there is an error in a tab, simply store that tab again. For example, if there was an error in tab 03, press **control tab 03** and type the correct information for tab 03, then press **tab**. Make any corrections in other tabs in the same manner, then press **return** to complete the storing procedure. Recheck by pressing **tab** as many times as necessary. Remember to press **return** when you're finished checking.

Accessing Tabs

Once you store tab information, calling it out is a simple tab-type-tab-type operation.

1. Fill in the function field and be sure the typesetter is in manual mode.
2. Press **tab**. The information stored in tab 01 displays on your screen. The tab portion of the function field changes to 01.
3. Type the text for tab 01 followed by a **tab.**
4. Notice that the function field changed to display the information you stored in tab 02.
5. Type the text for tab 02 followed by a **tab.**
6. The function field automatically changes to the next tab information. Type the text followed by a **tab**. Repeat this tab-text-tab-text operation until the last tab.
7. After typing the text for the last tab, press **return.** This positions the typesetter at the left margin and the tab counter on your function field back at 00.
8. Type the next lines of the job using the same procedure.

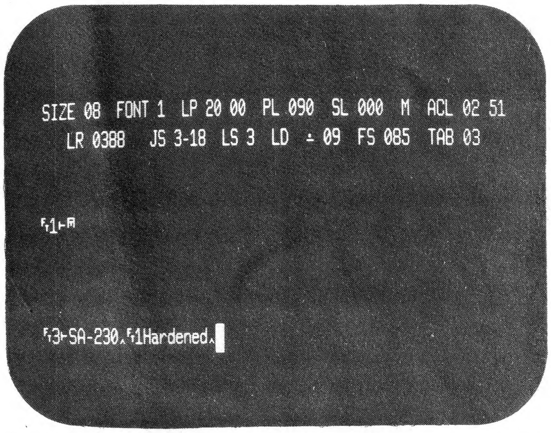
Overriding a Stored Tab

There are times when you'll want to change the functions in a stored tab for one line. When you reach the tab position where you want to change something that was stored, simply type the changes with the desired text. Back up or erase text or functions that are displayed for that tab position. Your output reflects that one-time difference, yet the tab memory is unchanged. Your next line returns to the functions you originally stored. If you're going to change the line length, it should be the first information you override when you call out the tab. Change font or size commands after this.

Tab Indexing

Most of the tabular jobs you keyboard will have fewer than ten columns.

If you frequently use different sets of tabs, you can make use of more tab storage areas (up to a maximum of 99) and



```
SIZE 08  FONT 1  LP 20 00  PL 090  SL 000  M  ACL 02 51
   LR 0388   JS 3-18  LS 3  LD ± 09  FS 085  TAB 03

F1⊢A

F3⊢SA-230‸F1Hardened‸█
```

Press tab to call out the information you stored in each tab column.

simply instruct the typesetter to begin with a particular tab number.

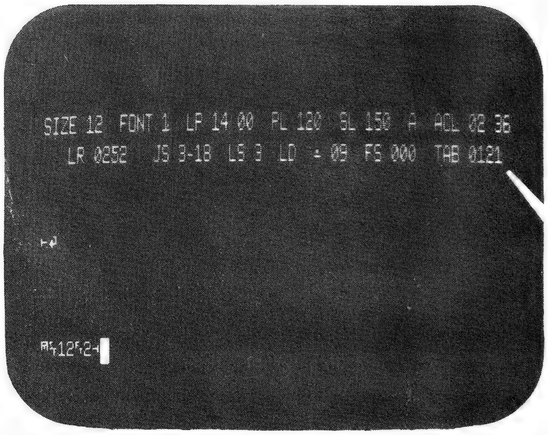
How does the typesetter know which tabs to use? As you keyboard a tab job, every time you tab, the tab counter on the screen increases—or indexes—one number. This tab indexing is built into the typesetter and instructs the counter to go back to 00 after reading a return code. Every time you tab, the counter increases one number.

If you want to begin your job with a particular tab number, type a tab index command by pressing **control o** followed by the number you want to begin your tab job with. For example, **control o 21**. The typesetter will begin your tab job with the information you stored in tab 21.

When you press **control o 21** (or whatever tab number you keyboard), the typesetter considers this tab number as your starting point. The two numbers corresponding to the index display next to the tab counter. The tab counter in the function field, however, reads 01 when you press **tab**, even though you're actually beginning with tab 21.

As you tab, the counter in the function field increases—02, 03, 04, etc.—but the typesetter is actually using the information stored in tabs 22, 23, 24, etc. The index number doesn't change until you index to another tab number. When you return at the end of the typing line, the counter returns to 00, but when you tab, the typesetter again begins with the information stored in tab 21.

This temporary stating position remains in effect until you change it by pressing **control o** and two digits or press **reset data.**



```
SIZE 12  FONT 1  LP 14 00  FL 120  SL 150  A  AOL 02 36
  LR 0252  JS 3-18  LS 3  LD + 09  FS 000  TAB 0121
```

When you index to a tab number, that number displays next to the tab counter. It doesn't change until you index to another tab number.

Storing Data

Besides the 99 tab storage areas, you can also store 99 different data areas. These data areas can be text, text and function combinations, or just functions.

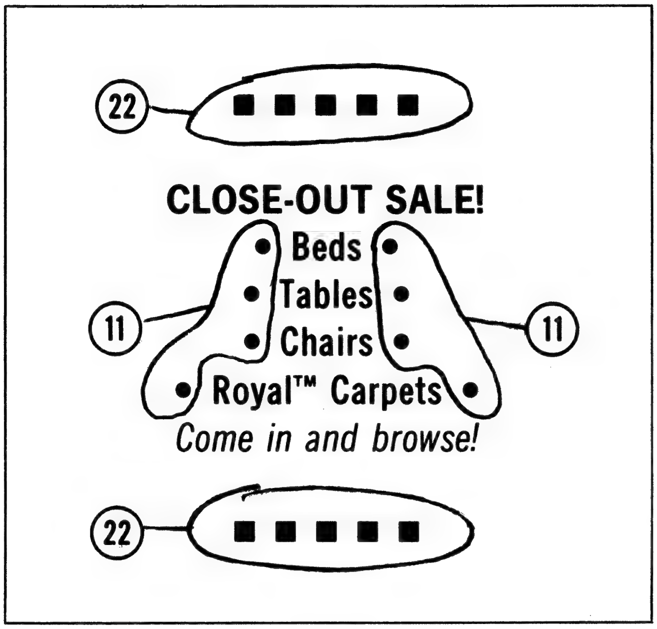
Information that is repetitive in nature—a logo, an address block, frequently used long names—are kinds of data that are perfect for storing. Rather than type the information every time you need it, simply call out the data number it's stored in.

Setting Up Data Areas

Unlike the tab memories, consecutive numbering is not important when storing and using different data areas. Any combination of numbers can be used randomly from 01 to 99.

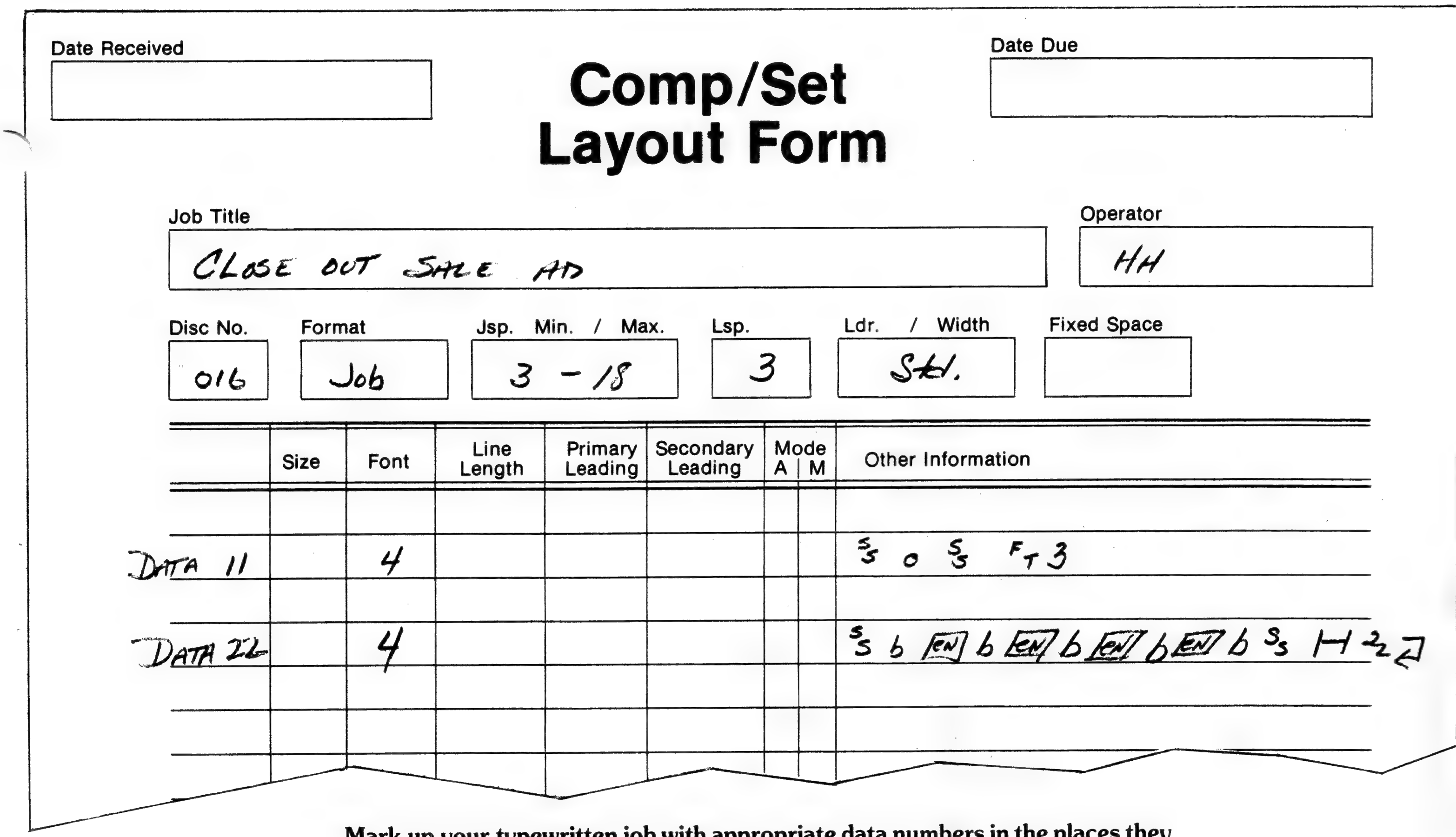
To store data into memory:

1. Mark up the information you want to store in data using a Comp/Set layout form. Assign a data number to each area.
2. Put the typesetter in the manual mode by pressing **control m**.
3. Clear the tab and data memories by pressing **control tab** followed by the digits **00** and **word erase**. This clears all data and tab memories.
4. Store the first data area by pressing **control data** and two digits. (Use any digits from 01 to 99.) Then type



CLOSE-OUT SALE!
• Beds •
• Tables •
• Chairs •
• Royal™ Carpets •
Come in and browse!

Rather than change from font to font and in and out of supershift, store this repetitive information in data and call it out as you keyboard the job.



Date Received

Date Due

Comp/Set Layout Form

Job Title: CLOSE OUT SALE AD

Operator: HH

Disc No.: 016

Format: Job

Jsp. Min. / Max.: 3 - 18

Lsp.: 3

Ldr. / Width: Std.

Fixed Space

	Size	Font	Line Length	Primary Leading	Secondary Leading	Mode A	Mode M	Other Information
DATA 11		4						$^{S}_{S}$ o $^{S}_{S}$ $^{F}{}_{T}3$
DATA 22		4						$^{S}_{S}$ b $\boxed{EN}$ b $\boxed{EN}$ b $\boxed{EN}$ b $\boxed{EN}$ b $^{S}_{S}$ H $^{2}_{2}$ ↲

Mark up your typewritten job with appropriate data numbers in the places they belong. As you keyboard the job, press DATA and the digits for that particular number. The copy stored in that data number displays on the screen the information for that data area. You can type up to 251 characters in any one data area.

The information displays on the typing line as you keyboard it. You can check to be sure the information is correct before you store the data. If you see a mistake correct it by using **single erase**. (Only use the single erase key to correct tab or data memories.)

Press **data** to end the segment when you are satisfied that the information is correct. The information moves up on the screen and is stored in memory.

5. Store the next data area in the same way. Press **control data** and two digits, type the information, then press **data**. Every time you enter a new data area, the previous data information goes off the top line of the screen.
6. Repeat step five until you've stored all data areas.
7. After the last data area is stored, press **return** to complete the storing procedure.

Verifying What You Typed

When you finish typing and storing data areas, check to be sure they are correct by pressing **data** and the digits for each memory area. The copy and functions display on the screen. Keep pressing **data** and the digits to check all data areas, then press **return**.

Correcting Data Memories

If there is an error in a data area, simply store that data area again. For example, if there was an error in data 15, press **control data 15** and retype the information for data 15, then press **data**. Make corrections in other data areas in the same manner, then press **return** to complete this storing procedure. Recheck this data area by pressing **data 15** and if it is correct, press **return**.

Accessing Data

Mark up your copy before you begin to keyboard it so that you know where to insert particular data numbers. When you reach a point in the copy where you want to enter a stored data memory, simply press **data** and the number of the data memory you want to access.

The information stored in that data area displays on the screen and is automatically typeset according to your specifications.

Using Stored Data and Stored Tabs Together

Although data and tabular information can be stored and used anywhere within a job, it is a good practice to plan ahead and store all the necessary information at the beginning of a job.

Use stored data numbers within stored tabs by accessing the tab first (press **tab** until the desired tab is reached), then call out the desired data number (press **data** and two digits).

There are three important steps to remember whenever you store tabs and data:

clear the tab/data memory
store information—end storage
press return

Once this is complete, your tab/data memory areas are ready for use throughout a job.

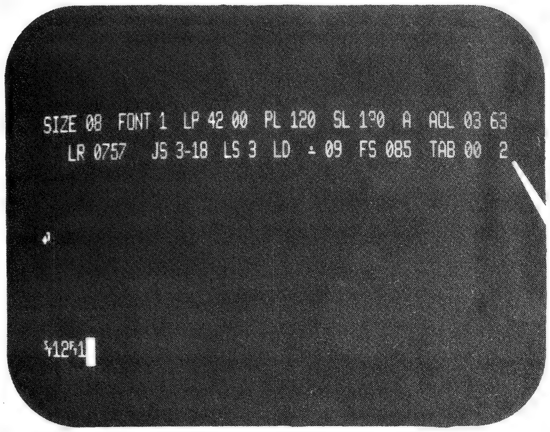
Overflowing the Memory

It's unlikely, but if you attempt to store more than 750 characters in your tab/data memory, a beeper sounds and an operational message, the number two, displays in the upper right side of the function field. This indicates an overflow in your tab/data storage memory and the information in that tab or data number you are storing is ignored.

If this happens, clear either a part of the storage memory, or the entire memory. Shorten your tab and/or data information and restore the tab or data numbers as necessary.

To clear the entire tab/data memory, press **control tab 00 word erase**.

To clear part of the tab or data memory, store an empty tab or data number over an existing tab or data number. For example, press **control tab** and two digits followed by a **tab** to clear that tab. Press **control data** and two digits followed by **data** to clear that data number. All the information previously stored is cleared.



```
SIZE 08  FONT 1  LP 42 00  PL 120  SL 1°0  A  ACL 03 63
   LR 0757   JS 3-18  LS 3  LD  ± 09  FS 085  TAB 00  2
```

If you overflow the tab/data memory, an operational message displays and a buzzer sounds.

tab and data examples

The next few pages show examples of typeset tab jobs. Some of them use stored data. Some of them use tab indexing. The Comp/Set layout charts show the functions that were stored in the tab and data areas.

If you have questions about how they were set, be sure to ask your customer relations representative.

Date Received

Comp/Set Layout Form

Date Due

Job Title: grocery ad

Operator:

Disc No.	Format	Jsp. Min. / Max.	Lsp.	Ldr. / Width	Fixed Space
VT 001	Job	3 - 09	0	· 09	—

	Size	Font	Line Length	Primary Leading	Secondary Leading	Mode A	Mode M	Other Information
TAB 01	14	1	0800	160	000		✓	⊢
02		3	0400					⊣
03		1	0800					⊢ CT ⊢ 0100
04		3	0400					CT H 0000 ⊣
05		1	0700					⊢ CT ⊢ 0100
06		3	0400					CT H 0000 ⊣

Matt's Market

Apples	3 lbs. 87¢	Tangerines	12 for 99¢	Lettuce	head 49¢
Peaches	lb. 39¢	Plums	lb. 39¢	Tomato	lb. 79¢
Oranges	10 for 99¢	Grapes	lb. 79¢	Onion	3 lbs. 29¢
Pears	lb. 49¢	Cherries	lb. 89¢	Radishes	bag 29¢
Strawberries	qt. 89¢	Bananas	lb. 15¢	Carrots	lb. 19¢

If checked ☐ see additional information on reverse side

FORM VT2955 – 4/75

Page ____ of ____

Date Received

Date Due

Comp/Set Layout Form

Job Title: MEMORY ACCESS

Operator:

Disc No.	Format	Jsp. Min. / Max.	Lsp.	Ldr. / Width	Fixed Space
VT 002	Job	3 - 18	3	∸ 09	—

Tabs	Size	Font	Line Length	Primary Leading	Secondary Leading	Mode A	Mode M	Other Information
01	09	1	0400	100	200		✓	H
02		1	0400					H
03		1	0400					H
04		1	1600					
11	09	1	1200					
12		1	0500					⊢
13		1	0400					⊢
14		1	0400					⊢

Memory Access

LL dial	SL dial	PL dial	CONSTANT
0000	98	05	Mode switch (0-NM, 1-HSM, 2-HLM) NM - program standard
0001	98	06	18 pt. lens flash constant (1 flash-Std.) Blue label lens require 0002, Black-1
0012	98	07	72 pt. lens flash constant (12 flashes-Std.)
0003	98	08	Underset line control (Full-justified, QL-quad left)

LL dial	NM	HSM/HLM
0000	Full*	Full
0001	Full	QL
0002	QL	QL
0003**	QL	Full

*NM-will letterspace and extend word-space up to 255 units to justify word(s).
**Program standard

LL dial	SL dial	PL dial	CONSTANT
0003	98	09	Minimum word space (3 units-Std.) Increasing this standard will reduce hyphenation & increase word space.
0000	98	11	Erase all stored data (access 0000 only)

If checked ☐ see additional information on reverse side

FORM VT2955 – 4/75

Page ____ of ____

Date Received

Date Due

Comp/Set
Layout Form

Job Title: The Book Store

Operator:

Disc No.	Format	Jsp. Min. / Max.	Lsp.	Ldr. / Width	Fixed Space
VT 002	Job	3 / 09	0	- / 09	010

		Size	Font	Line Length	Primary Leading	Secondary Leading	Mode A	Mode M	Other Information
TAB	01	08	1	0206	090	025		✓	⊢
	02		1	1500					⊢
	03		3	0206					⊣
	04		1	0300					⊣
DATA	11								2∟ ↲
			2	2308					|··| ⊢ ↲

Come to **The Book Store** to see our latest addition—a library of books about offset printing and lithography!

No.	Name	Our Price	List Price
1201	What the Printer Should Know About Paper	**$ 4.25**	$ 8.50
1210	What the Lithographer Should Know About Ink	**3.75**	7.50
1219	Instruments and Controls	**3.75**	7.50
1202	Color Stripping	**3.75**	7.50
1203	A Selected Bibliography of the Graphic Arts	**1.80**	3.60
1207	The Lithographers Manual	**10.00**	20.00
1205	Offset Lithographic Platemaking	**4.25**	8.50
1503	Line Photography	**2.15**	4.30
1508	Halftone Photography	**3.15**	6.30
1512	Color Separation	**4.15**	8.30
1513	Advanced Pressmanship—Sheet-Fed Presses	**3.75**	7.50
1515	Photocomposing	**3.75**	7.50
	Handbook for Graphic Communications—per set	**17.50**	35.00
	Volume I	**3.75**	7.50
	Volume II	**2.00**	4.00
	Volume III	**3.25**	6.50
	Volume IV	**2.50**	5.00
	Volume V	**4.00**	8.00

The above is only a partial listing of books included in our new department! Don't miss our great everyday low prices!

123 Main St.

The Book Store

(614) 223-4534

Hempfield

If checked ☐

FORM VT2955 – 4/75

Page ____ of ____

Date Received

Date Due

Comp/Set Layout Form

Job Title: MARIA ISABEL - SHERATON HOTEL

Operator:

Disc No.	Format	Jsp. Min. / Max.	Lsp.	Ldr. / Width	Fixed Space
VT 001	JOB	3 - 09	0	· 09	—

TABS	Size	Font	Line Length	Primary Leading	Secondary Leading	Mode A	Mode M	Other Information
01	06	1	0800	070	150		✓	⊢
02	06	1	0800					⊢
03			1600					⊣

Regional Sales Offices:

Houston, Texas 77002
777 Polk Avenue
(713) 224-9041

Washington, D.C. 20036
1100 17th St. N.W.—Suite 407
(202) 785-0210

Chicago, Ill. 60601
35 E. Wacker Dr.—Suite 3200
(312) 263-4607

New York, N.Y. 10017
6 East 43rd St.
(212) 986-0270

Call Toll Free:

800-325-3535

Maria Isabel-Sheraton Hotel

If checked ☐ see additional information on reverse side

FORM VT2955 – 4/75

Page ____ of ____

Comp/Set Layout Form

Date Received:

Date Due:

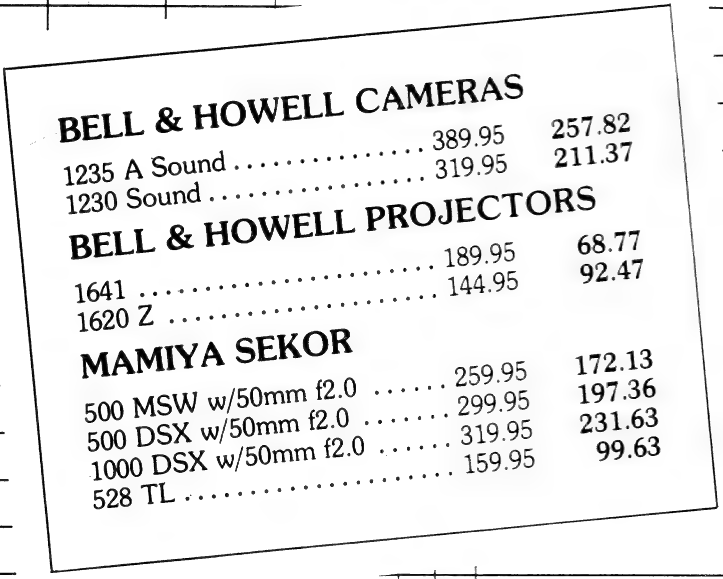
Job Title: Bell & Howell Cameras

Operator: File 5

Disc No.	Format	Jsp. Min. / Max.	Lsp.	Ldr. / Width	Fixed Space
VT 001	Job	3 - 18	3	. 09	—

TABS	Size	Font	Line Length	Primary Leading	Secondary Leading	Mode A	Mode M	Other Information
01	10	1	1400	110	170		✓	
02		3	0400					FR
03	12	3	1800					

This tab is set up for the headings.



BELL & HOWELL CAMERAS

1235 A Sound	389.95	257.82
1230 Sound	319.95	211.37

BELL & HOWELL PROJECTORS

1641	189.95	68.77
1620 Z	144.95	92.47

MAMIYA SEKOR

500 MSW w/50mm f2.0	259.95	172.13
500 DSX w/50mm f2.0	299.95	197.36
1000 DSX w/50mm f2.0	319.95	231.63
528 TL	159.95	99.63

If checked ☐ see additional information on reverse side

FORM VT2955 – 4/75

Page ____ of ____

Date Received

Date Due

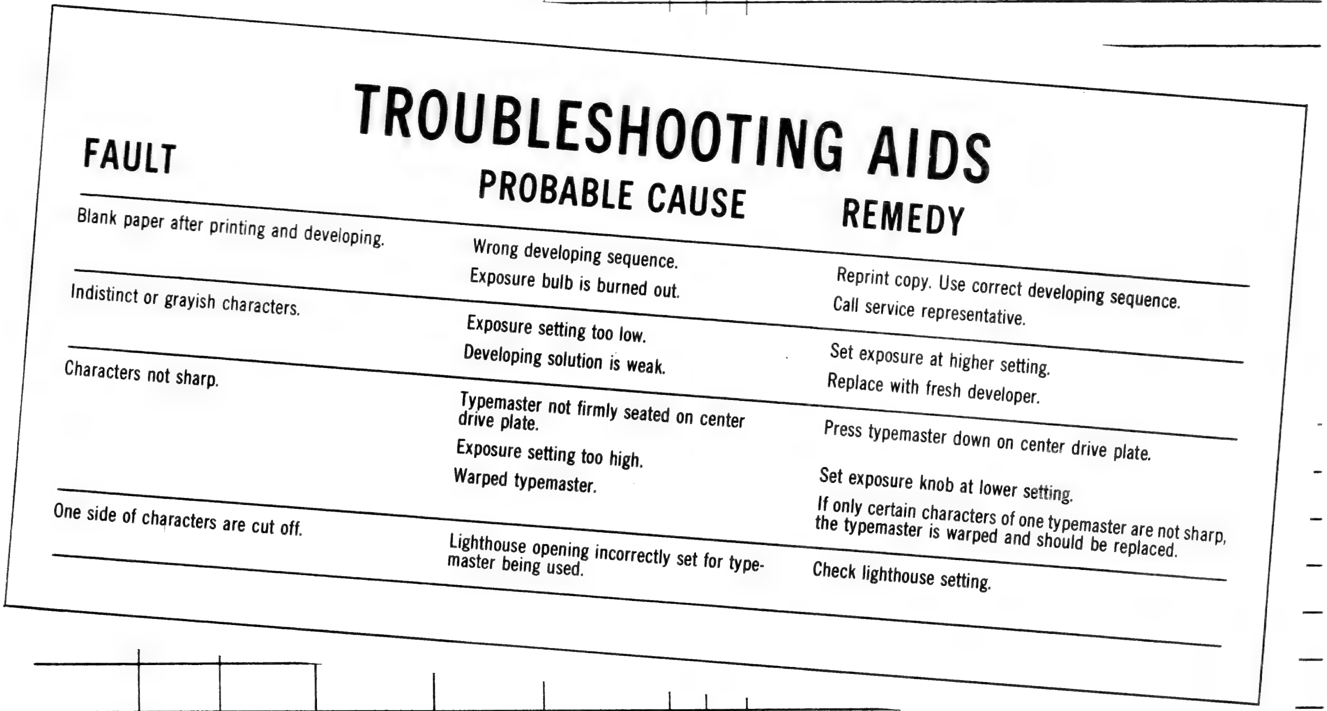
Comp/Set Layout Form

Job Title Troubleshooting Aids

Operator

Disc No.	Format	Jsp. Min. / Max.	Lsp.	Ldr. / Width	Fixed Space
VT 016	Job	3 / 18	3	· / 09	—

	Size	Font	Line Length	Primary Leading	Secondary Leading	Mode A	Mode M	Other Information
Tabs 01	07	1	1206	070	100		✓	
02			1106					
03			1300					
Data 11								⊢ ↵
	10	2	3701					1··1 2L ⊢ ↵



TROUBLESHOOTING AIDS

FAULT	PROBABLE CAUSE	REMEDY
Blank paper after printing and developing.	Wrong developing sequence. Exposure bulb is burned out.	Reprint copy. Use correct developing sequence. Call service representative.
Indistinct or grayish characters.	Exposure setting too low. Developing solution is weak.	Set exposure at higher setting. Replace with fresh developer.
Characters not sharp.	Typemaster not firmly seated on center drive plate. Exposure setting too high. Warped typemaster.	Press typemaster down on center drive plate. Set exposure knob at lower setting. If only certain characters of one typemaster are not sharp, the typemaster is warped and should be replaced.
One side of characters are cut off.	Lighthouse opening incorrectly set for typemaster being used.	Check lighthouse setting.

If checked ☐ see additional information on reverse side

FORM VT2955 – 4/75

Page ____ **of** ____

®
ADDRESSOGRAPH MULTIGRAPH
VARITYPER DIVISION
11 MT. PLEASANT AVENUE • EAST HANOVER, NEW JERSEY 07936

Comp/Set 3500 Series Phototypesetting Systems

operating instructions

Literature Kit No. 17-7917-0

March, 1977

Copyright 1977
VariTyper Division
Addressograph Multigraph
Corporation

Comp/Set® is a registered trademark of the Addressograph Multigraph Corporation.

product introduction and description

Comp/Set®

phototypesetting
systems

TABLE OF CONTENTS

SECTION **Page(s)**

I. Introduction 1-3
  A. Power On/Off Button and Screen Brightness Control 1-3
  B. The Type Disc 1-4
  C. Photographic Paper 1-6
  D. Copy Intensity Dial 1-8

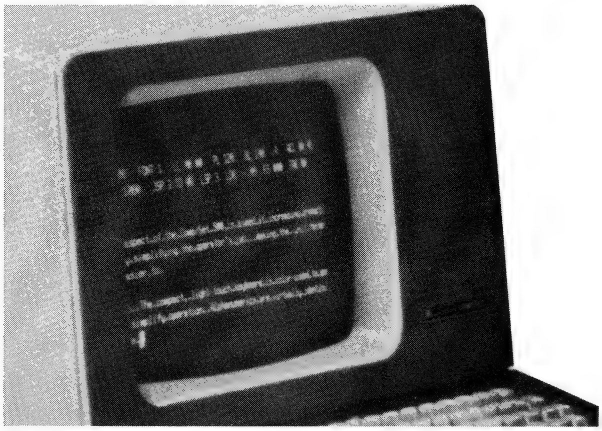
II. Operating Instructions

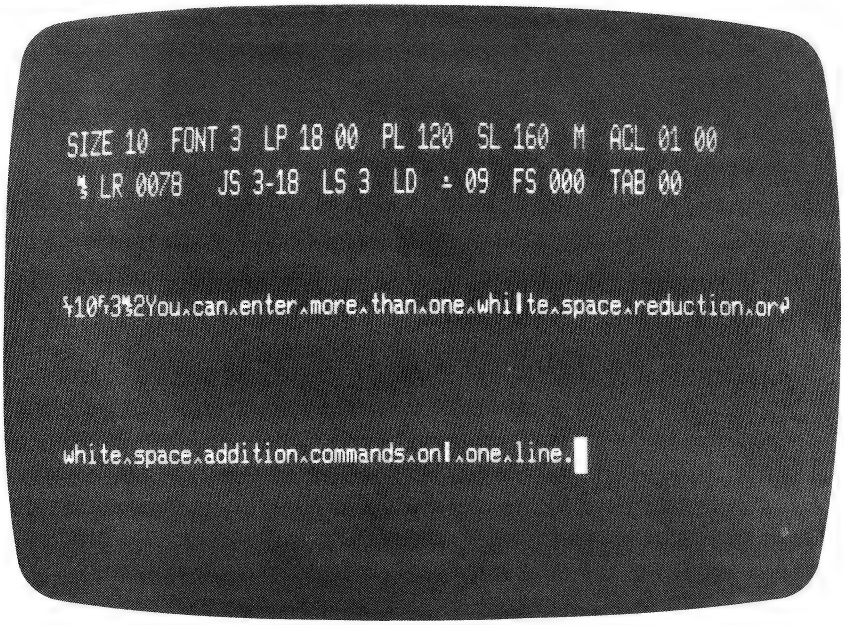
Lesson

1. General II-1
2. Your Measurement System II-2
3. Size II-3
4. Fonts II-4
5. Line Length (Picas & Points) II-5
6. Primary Leading II-6
7. Secondary Leading II-7
8. Cursor & Corrections II-8
9. Justified Copy II-9
10. End of Job II-10
11. Exercise II-11
12. Control Function Chart II-12
13. Automatic & Manual Modes II-13
14. Minimum & Maximum Word Spacing II-14
15. Letterspacing II-15
16. Case & Disc Formats II-16
17. Fixed Spaces II-17
18. Auto Indents II-18
19. Accumulated Leading II-19
20. Leaders II-20
21. Mortise II-21
22. White Space Reduction/Addition II-22
23. Reverse Carriage II-23
24. Tabular Copy II-24
25. Add Lead II-25
26. Re-read Character Widths/Insert Character Width II-26
27. Modify Line Lengths II-27
28. Auto Ragged Copy II-28
29. Line Length in Ciceros and Units II-29
30. Trouble Shooting II-30

III. Applications/Samples ....

IV. Product Options ....
V. Operator Aids ....





```
SIZE 10  FONT 3  LP 18 00  PL 120  SL 160  M  ACL 01 00
 ½ LR 0078   JS 3-18  LS 3  LD  ± 09  FS 000  TAB 00


½10⁵3½2You‸can‸enter‸more‸than‸one‸whi▮te‸space‸reduction‸or↵



white‸space‸addition‸commands‸on▮‸one‸line.█
```

INTRODUCTION

The 3500 series Comp/Set phototypesetter is a high production typesetting system that will help you to produce professional quality, camera ready composition.

The system is made up of three parts—a typewriter-like keyboard, a screen and a typesetter.

The KEYBOARD is color coded for easy identification. The beige alphanumeric typing keys are arranged in a layout that is similar to a normal office typewriter. The orange function keys activate typesetter commands. (These function keys are discussed in depth in the Operating Instructions section.)

The characters you type are displayed on a SCREEN and then set photographically by the typesetter.

Unlike a normal television, the Comp/Set screen has three different sections.

> The function field displays at all times and verifies the main functions you're using for a job. It gives you an overview of the parameters of your job while you're keyboarding it.
>
> As you keyboard, two areas of copy display below the function field. The bottom area is the line you're keyboarding. It might actually take more than one line on the screen, but when it's typeset, it will be one typeset line. You have complete control of this line and can back up and make corrections or changes.
>
> Once you type a return, this bottom line moves up on the screen and the typesetter photographically sets the line. When this line moves up, you can't recall it. (Any changes, therefore, should be made before you type a return.) Once this line moves up, you can keyboard another line that will begin to display and fill the lower area of the screen.

The TYPESETTER has an automatic lens mechanism that allows you to select many different type sizes.* This lens mechanism doesn't require any maintenance.

A. Power On/Off Button and Screen Brightness Control

The black power on/off switch for the Comp/Set 3500 series phototypesetter is located just inside the second panel of the typesetter cabinet. Lift the panel edge up and press the on/off switch up to turn the system on. Press the same switch down to turn the system off.

Once you turn the power on and press RESET DATA, the two function field lines display. You can adjust the brightness of the screen. The screen brightness control switch is located on the underside of the screen cabinet, on the left side, near the back. This control is a thumbwheel that you roll either forward or backward to regulate the brightness of the image on the screen. It adjusts to meet your reading needs.

---

*The model 3500 Comp/Set phototypesetter produces 33 different type sizes. The model 3510 Comp/Set phototypesetter produces 70 different type sizes.

B. The Type Disc

The type disc is a small circular film containing the characters that will be set photographically.

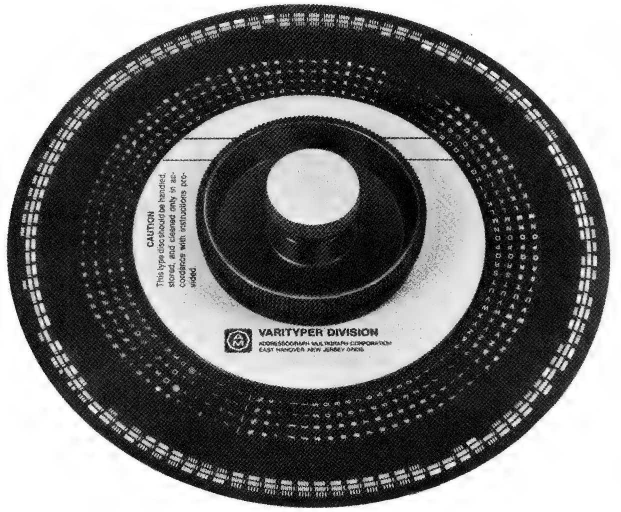
Each disc contains four different styles of type. The type disc can be removed from the machine and a new type disc inserted during operation, thus allowing for a virtually unlimited number of different styles of type within a job. Each disc is labeled with the styles it contains and a disc number. Until you become familiar with your discs, it may be a good idea to make a list of the discs and their type styles to keep with the machine as a reference. There is a list of discs available for the Comp/Set in the Catalog of Phototypesetting Type Faces supplied with your machine.

1. Care and Cleaning of the Type Disc

The type disc should be handled with extreme care! Store the disc in the box provided and keep the interior of the box clean. Do *not* set the disc down on unclean or rough surfaces. Be careful when removing or inserting a type disc that the disc does not get scratched against parts of the machine. Scratches on the surface of the type disc can permanently damage the disc, causing it to be unuseable. The disc should only be handled using the disc retaining handle in the center of the type disc.

One of the most effective products for cleaning the type disc is lighter fluid. Film cleaners are also available on the market, and some work fine, but others leave a harmful residue on the disc. Water or water base solutions are *not* to be used to clean the type discs as they will permanently damage the disc.

Dampen a soft cloth or cotton pad with the lighter fluid. (Some materials "feel" soft, but actually contain hard or abrasive fabrics. A Multilith cotton pad or its equivalent works fine.) Holding the type disc by the disc retaining handle, gently wipe the surfaces of the disc. The lighter fluid will not remove the opaquing (material used in blocking out parts of the negative) on the disc, if the disc is wiped lightly. It is also a good practice to dust both sides of the disc with a camel-hair brush, preferably electrostatic which can be purchased at most photographic equipment stores.


CAUTION
This type disc should be handled, stored, and cleaned only in accordance with instructions provided.
VARITYPER DIVISION
ADDRESSOGRAPH MULTIGRAPH CORPORATION
EAST HANOVER, NEW JERSEY 07936

Do not: Place the disc down on a piece of plastic while wiping with lighter fluid. The lighter fluid will react with the plastic which may cause a foreign substance to transfer from the plastic to the disc.

Do not: Clean the disc by laying it on a flat surface, holding the cleaning pad in one position and turning the disc. This may scratch the front of the disc.

Again, the better the care and handling of the type disc, the longer life it will have.

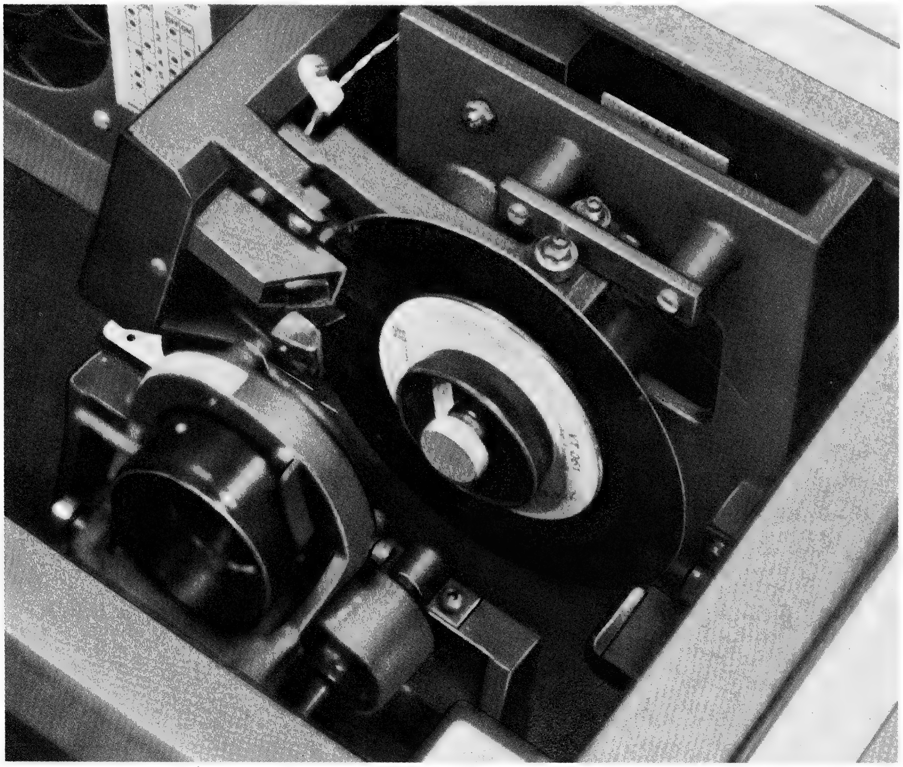
2. Removing a Type Disc

Changing a type disc can be done with the machine turned ON or OFF. To change a type disc, follow these steps:

1. Place an empty disc box on a convenient work space.
2. Open the cover panel on the top of the typesetter console.
3. Directly behind the disc retaining handle is a plastic grip. Firmly hold this grip and unscrew the disc retaining handle by turning counterclockwise.
4. The disc can now be removed by sliding it to the right and out.
5. Place the type disc in the empty box.

3. Inserting a Type Disc

1. Holding the disc by the plastic grip, place the left edge of the disc into the slot.
2. Holding the plastic grip, tighten the disc retaining handle.
3. Spin disc slowly. If properly inserted it will turn easily.
4. Close the cover panel.



4. Changing a Disc Within a Job
There may be times when a disc must be changed within a job. It can be easily done without exposing a partially completed job. When the top panel door is opened, a shutter automatically closes preventing exposure to the photographic paper. Change the disc following the procedures outlined previously.

Note: Discs can only be changed between typeset lines, NOT inter-word.

C. Photographic Paper

Characters typed at the keyboard are exposed from the type disc, through the lens system, and onto the photographic material. This paper usually comes packed in cardboard cassettes which easily insert into the Comp/Set Phototypesetter. Each VariTyper supply cassette contains 150 feet of rolled photographic paper. The paper cassette can be inserted into the machine with the machine power ON or OFF.

1. Inserting Paper Cassette with Power OFF

a. Remove the take-up cassette from the machine. This is accomplished by gripping the handle on top and gently pulling forward.
b. Open the side panel door by pulling up on the small lever located at the top right corner. The panel will swing down.
c. Cut the paper edge on the new cardboard cassette to approximately 2-3 inches.
d. Holding the cover mechanism up, insert the cardboard cassette into the machine so that the writing on the box is visible and the knobs on each end of the box fit into their slots on the machine. The edge of the paper should be directly behind the first roller.
e. Push cover mechanism down until it clicks.
f. Roll the thumb dial on the left side of the cassette up 5-6 times.
g. Pull up on the locking latch to secure the feed rolls.
h. Turn "paper feed" knob on right side of cassette "up", if the thumb dial starts turning, the paper has been correctly loaded. (Make certain the machine is OFF.)
i. Close the panel door, turn on the machine, and fill in the function field so that you can press [©] [e] which automatically advances the exposed paper about seven inches.
j. Cut the exposed paper with the paper knife lever and discard. The paper cuts when the lever for the paper knife is pressed once all the way down. Do not press the paper knife lever more than one time per cut as shavings will fall into the paper magazine and can cause paper jams.
Replace the take-up cassette.

Depress the recessed footage counter button with a pencil tip to begin the counter at zero.

2. Inserting Paper Cassette with Power ON.
The paper can also be loaded with the machine on. Follow steps a through g. ~~h.~~ *Do Not Use* the "UP/DOWN" knob. Instead, close the door and then press [©] [e] .* The paper will advance if correctly loaded.

[©] = Control Key

***Note:** This function, "Control + e", cannot be accessed until the operator "fills-in the Function Field", to be discussed in Inputting Procedures Section.

3. Exposed Paper

When the front panel door is opened to load paper, a section of the photographic paper is exposed—about 7″. Always advance the paper by keyboarding an "End of Job" command $\boxed{\copyright}$ $\boxed{e}$ once the door is closed again.

4. Paper Jam

If a paper jam should occur do *not* cut the paper with the paper knife. Instead, turn the machine off, open the front panel door and turn the "Up/Down" knob towards the "down" arrows. This will reverse the rollers and free the paper.

If resin coated paper is being used and since it is thinner, your Vari-Typer Service Representative may need to adjust the feed rolls and loosen the receiving cassette opening to prevent paper jams.

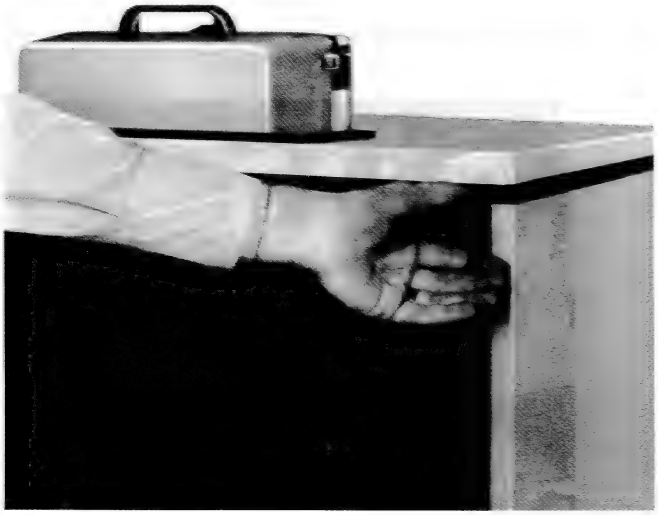
5. Footage Indicator

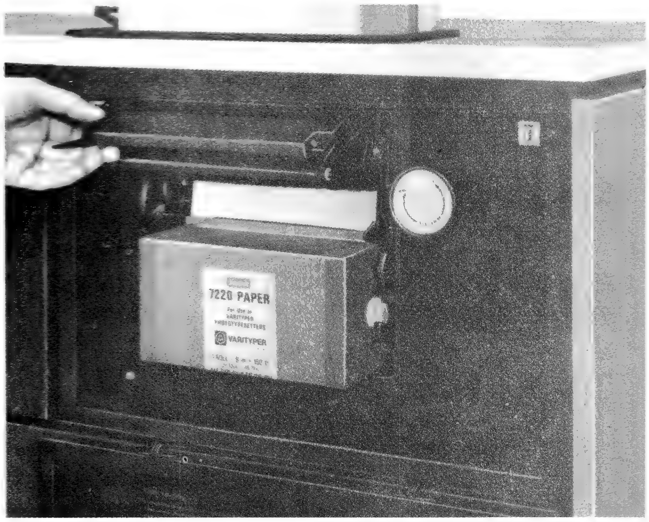
The footage indicator, located on the front right side of the typesetter, shows the total amount of paper used in feet and tenths of a foot. Each box of paper contains at least 150 feet. When a new box is loaded, reset the footage indicator to all zeroes by pressing the recessed button with a pencil or pen.

6. Processing Procedures

Once a job has been completed follow these steps to process the job: An "End of Job" Command will advance the paper approximately 7 inches.

a. Depress the paper knife located on the left of the take-up cassette. Do not press this lever more than once for each job to be processed.
b. Remove the take-up cassette from the machine by gripping the handle on top and gently pulling forward.
c. Pull an additional one inch of paper out of the take-up casette.
d. Develop the image as stated in the AM 745 Processor, "Instruction and Reference Manual".





7. Proper Storage of Phototypesetting Paper or Film

Improper storage of phototypesetting paper or film can result in "light leaks". These light leaks are generally horizontal and may expose only a small portion or extend across the entire width of the paper. Depending on the length of exposure, several layers within the roll may be affected. To avoid this condition:

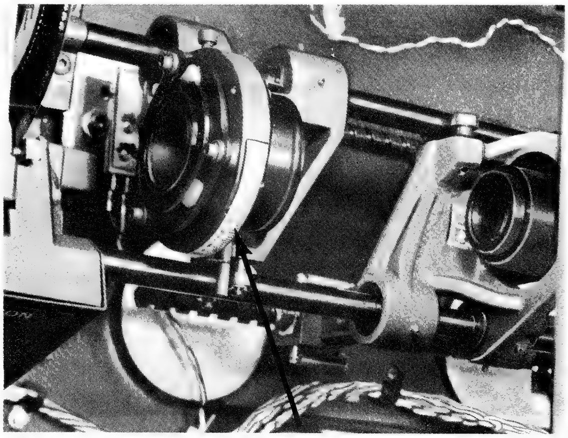
a. Store phototypesetting paper or film in a storage area which is not continuously exposed to light; eg. metal storage cabinet. (This may also apply to other light sensitive material.)
b. While in storage, face the cassette opening away from the light source. This also applies when paper or film is being transported from the storage area to the work area.
c. If a partially used cassette is removed from the phototypesetter, it should be returned to the storage area and stored as described above.
d. When shipping light sensitive supplies, the supplies should be wrapped in an opaque (black plastic or paper) material before it is placed into a shipping carton. (This is not required for supplies which remain sealed in the manufacturer's original shipping carton.)

D. Copy Intensity Dial

The typesetter has a copy intensity dial which will allow the operator to control the lightness or darkness of the copy being set photographically. This dial is located inside the typesetter above the disc. It is clearly marked with 11 positions ranging from minimum to maximum settings. Set at minimum the typeset copy will be as light as possible and will darken as the dial is turned up in number. The setting for this dial may vary with the individual machine. As a test, begin with the dial set at "2" and darken by increasing the setting.

Note: Comp/Set 3510 will start at higher setting.

Note: Probably the largest single contributor to copy density variations is the photographic paper. The nature of the photographic emulsion, manufacturing, chemicals involved, age etc., all may vary from roll to roll. For the most part, rolls in the same manufacturing lot will provide equal copy den-



Copy Intensity Dial

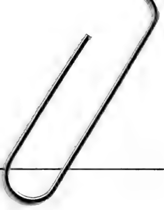
sity provided no change in the light source takes place. Keep in mind these variations are inherent with the photographic chemicals and manufacturing process involved. It *may* be necessary therefore, to adjust the copy intensity dial when:

a. Inserting a new roll of photographic paper in the machine.
b. If either the photographic paper or chemicals have had a long shelf life.
c. The temperature of the chemicals can also affect the copy intensity. (For best results chemicals should be between 65° and 85°F.)

operating instructions

Comp/Set®

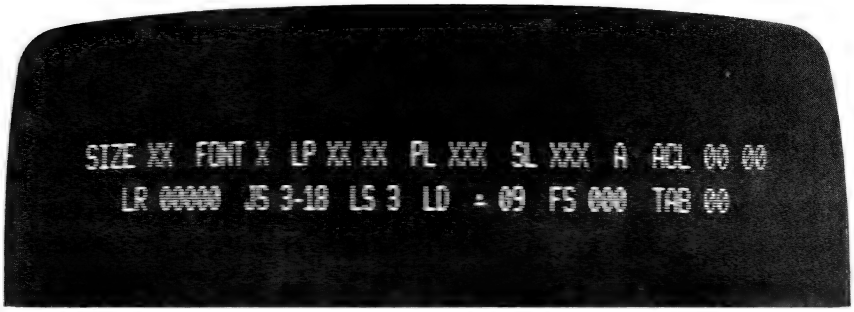
phototypesetting
systems



General

Lesson 1

After the machine is initially turned ON or anytime Reset Data is pressed, there will be 5 areas of the function field that contain "X's".



```
SIZE XX  FONT X  LP XX XX  PL XXX  SL XXX  A  ACL 00 00
  LR 00000  JS 3-18  LS 3  LD ± 09  FS 000  TAB 00
```

These five areas are functions (commands) which must be entered in the machine prior to keyboarding a job. The five basic functions are:

1. Size XX (Type Size)
2. Font X
3. LP XX XX (Line Length Picas)
4. PL XXX (Primary Lead)
5. SL XXX (Secondary Lead)

The following lessons explain these functions which are the basic information required to do *any* typesetting job. *Other keyboarding is prohibited until these functions are entered.*

Your Measurement System *Lesson 2*

Type size, Line lengths and spacing between lines (called leading by printers) are measured in picas and points.

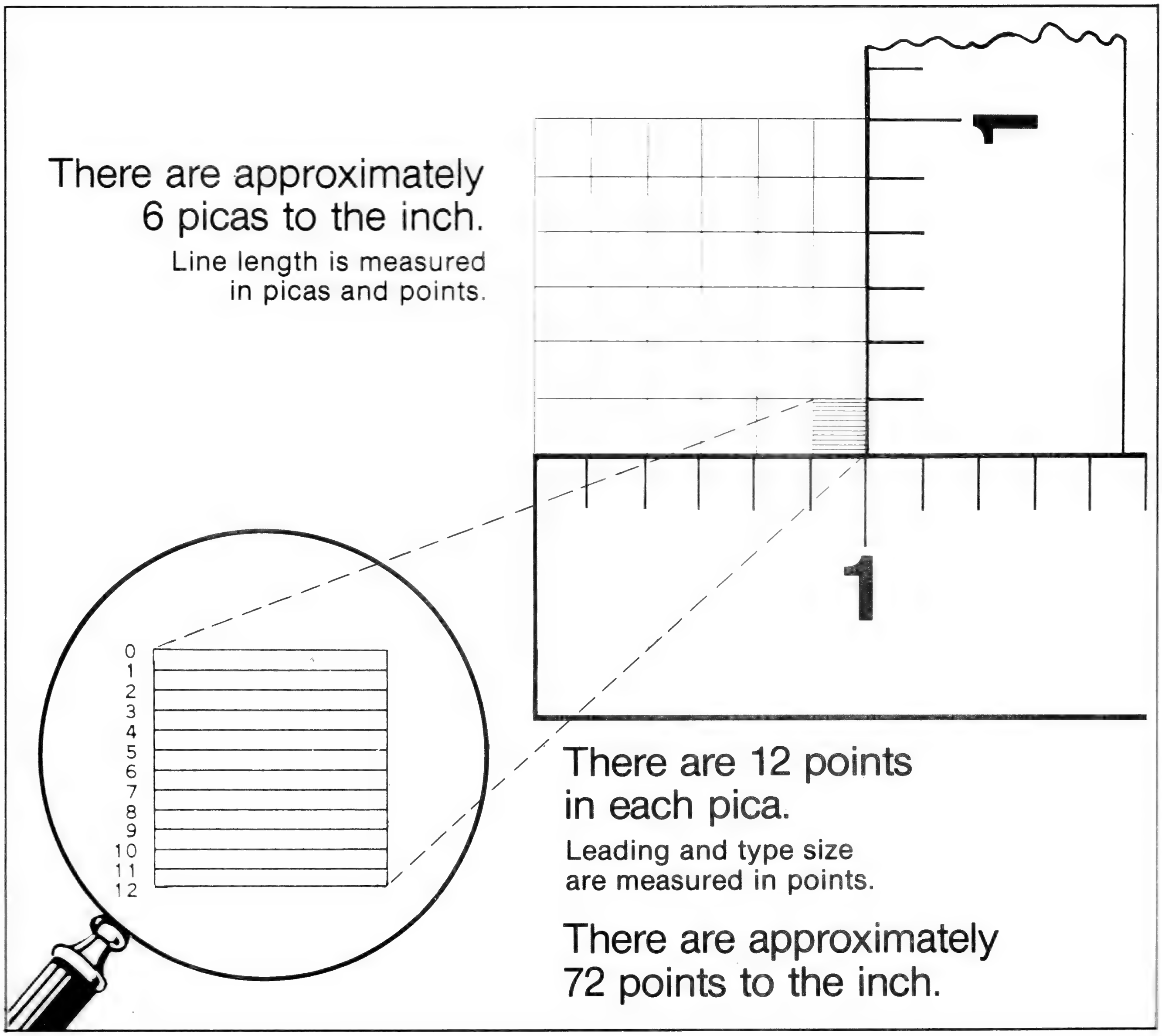
Sometimes the operator is told the width of the final copy in inches, for example 2 inches wide. Since the phototypesetter cannot receive its line length instructions in inches you must be able to convert the inch measurement to picas and points. The "Line Spacing Gauge" supplied with this manual, contains both an inch and picas scale on the outside edges to assist you in measuring line lengths.*

*If you wish to use a pica scale other than the "Line Spacing Gauge" supplied with this manual, compare the scales to ensure that both pica measurements are identical.

Note: 45 picas does not equal 7.5 inches. It is about 1/32 inch short. A point on a Comp/Set phototypesetter equals .01384 inch.

There are approximately 6 picas to the inch.

Line length is measured in picas and points.



There are 12 points in each pica.

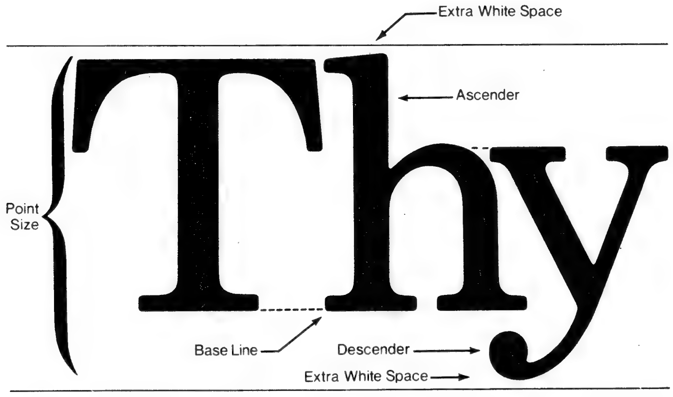
Leading and type size are measured in points.

There are approximately 72 points to the inch.

Size

Lesson 3

The size of type is expressed in points and determined by measuring the distance from the top of the ascender to the bottom of the descender as shown below, plus a small amount of white space which is built into the type design so that characters do not touch.



Note: The amount of extra space built into the design of the type may vary from one type style to another. Examine the 18 point sample of "Haverhill" type and the 18 point sample of "Megaron Medium" type in the "Catalog of Phototypesetting Type Faces". The Haverhill is smaller than the Megaron Medium, but both are accurately classified as 18 point type. Keep this variable in mind when measuring type size, and use your "Catalog of Phototypesetting Type Faces" to help determine type size.

There are 33 sizes of type for the Comp/Set Phototypesetter model 3500. All are available in the machine at one time. They are:

5½, 6, 7, 8, 8½, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 and 36.

The Comp/Set Phototypesetter model 3510 has 70 different type sizes available in the machine at one time. These include the 33 sizes listed above and sizes. . .

37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73 and 74.

Note: 55 point type is not available. The size key + 55 = 5½ point type.

Size Command

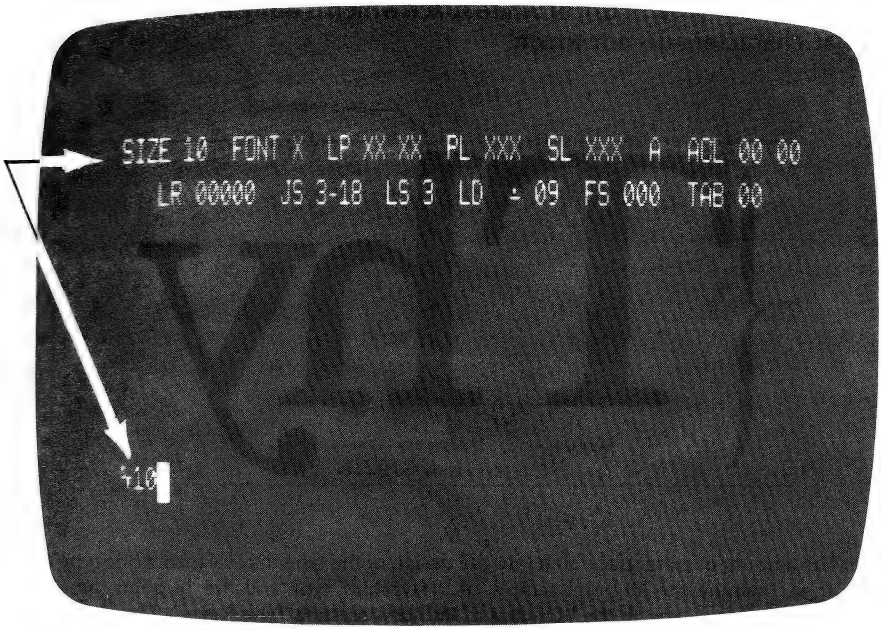
The Comp/Set phototypesetter must be told which of the above type sizes to be used. These instructions are entered from "function" or "command" keys. Some functions are recorded in the function field.

The Size key SIZE followed by 2 digits instructs the phototypesetter to set copy in the point size indicated by the two digits.

Example:

SIZE 1 0 = Size 10
SIZE 0 6 = Size 6
SIZE 8 5 = Size 8½

The point size is recorded in the function field and displayed on the typing line:



```
SIZE 10  FONT X  LP XX XX  PL XXX  SL XXX  A  ACL 00 00
   LR 00000  JS 3-18  LS 3  LD ± 09  FS 000  TAB 00

‡10
```

Once a size command has been recorded in the function field, new size commands will appear in the typing line, but will not appear in the function field until the line in which they appear is typeset.

A size command can be entered anywhere in the typing line and will cause the typesetter to change immediately to the size called for when typeset. The number of size commands that can be entered in any one line is unlimited.

Note: When changing sizes within a line, it is recommended that the size change sequence be given before the space bar is pressed.
Example: word⌃word SF08⌃word

Fonts *Lesson 4*

A font is a complete alphabet, A through Z in upper and lower case together with its matching numbers, punctuation and special symbols. Each page in the "Catalog of Phototypesetting Type Faces" is a representation of a font of type. Examine some of the different fonts, or styles. Each has its own personality and character, and its appearance lends itself to certain types of work. For Example:

- Times Roman*, Crown, and Empira are popular faces for newspapers.
- Times Roman*, Baskerville, and Bembo are popular in book publication.
- Copperplate Gothic, News Gothic, and Megaron are used in many "forms" publications.
- Avant Garde, Serif Gothic, and Souvenir are popular for advertising display.
- Wedding Text, Helanna Script, and Kaylin Script lend themselves nicely for announcements.
- P.T. Barnum and Caslon Antique could be classified as "Period" styles.

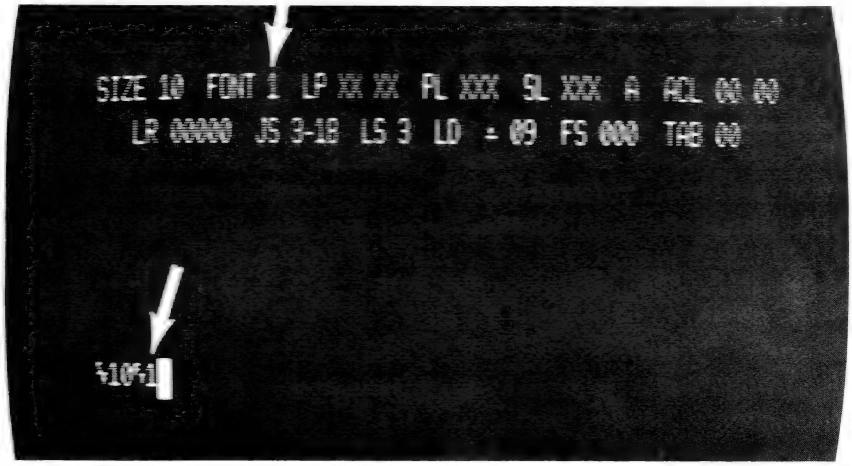
A type disc contains four (4) different fonts of type, and the names of the fonts are listed in the center. The order in which the fonts are listed is the order in which they are positioned on the disc.

Font 1 is generally light or medium face characters.
Font 2 normally contains italic characters of the same type style.
Font 3 is normally bold face characters of the same type style.
Font 4 will vary, containing either a matching or contrasting type style.

The Comp/Set must be instructed to use one of the four available type fonts. To keyboard a font command, depress the FONT key and 1 digit (1, 2, 3, or 4) representing the font of type desired.

FONT 1 = Font 1
FONT 2 = Font 2
FONT 3 = Font 3
FONT 4 = Font 4

The font is recorded in the function field and displayed on the typing line.



```
SIZE 10  FONT 1  LP XX XX  FL XXX  SL XXX  A  ACL 00 00
  LR 00000  JS 3-18  LS 3  LD + 09  FS 000  TAB 00

$10F1
```

---

*Many fonts are popular in a variety of applications. There are no "set" rules to what can be used, each choice is a personal opinion although some styles naturally lend themselves to certain work.

Once a font command has been recorded in the function field, new font commands will appear in the typing line, but will not appear in the function field until the line they are in is typeset.

A font command can be entered anywhere in the copy and will cause the typesetter to change immediately to the font called for. The number of font commands that can be entered in any one line is unlimited.

Line Length

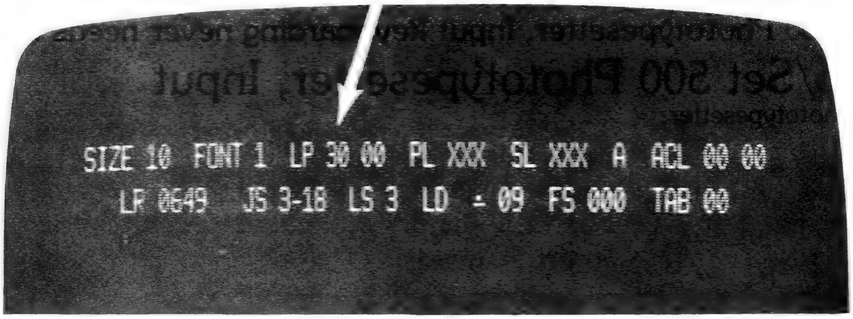
Lesson 5

The distance between the left and right margin is referred to as the line length. The Comp/Set phototypesetter must be told what this distance is to be. The line length may be entered in picas and points, units, or ciceros and points.*

Picas and Points

After turning the machine ON or anytime Reset Data is pressed, the line length designation in the function field will indicate LP (Line Length Picas and Points). To enter the line length, press the LINE LENGTH key followed by four numbers.

The first two numbers represent the number of picas and the last two numbers represent the number of points. The line length is immediately recorded in the function field. (If the last two digits are larger than 12 when they are entered, the typesetter will divide them by 12 for each pica.)



```
SIZE 10  FONT 1  LP 30 00  PL XXX  SL XXX  A  ACL 00 00
  LR 0649   JS 3-18  LS 3  LD = 09  FS 000  TAB 00
```

The maximum line length is 45 picas for all point sizes. The line length command is entered once at the beginning of the job and can be changed, if required, at anytime during the job by entering the new line length at the *beginning* of the line where the change is to take place. When changed, the new line length is immediately displayed in the function field.

Determining Line Length

The operator may be told what the line length is going to be in one of the following manners:

1. The line length may be expressed in picas. When the operator is told that the line length is to be 35 picas, the LL 3 5 0 0 is entered.

Other Examples:

LL of 12 picas = LL 1 2 0 0
LL of 24½ picas = LL 2 4 0 6
LL of 6 picas = LL 0 6 0 0
LL of 6¼ picas = LL 0 6 0 3

Exercise:

Fill in the blanks.

LL of 30 picas = LL ________
LL of 20¾ picas = LL ________
LL of 8 picas = LL ________
LL of 10½ picas = LL ________

2. The line length may be expressed in inches. It is then necessary for the operator to convert inches into picas and points.

Example:

6 inches = 36 picas

---

*Refer to Lesson 28 for entering the line length in units or ciceros.

Exercise:

Fill in the blanks.

3 inches =____________picas
7½ inches =____________picas
4¼ inches =____________picas
5¾ inches =____________picas

3. The operator may need to "match" the line length of copy that has been previously set. The "Line Spacing Gauge" supplied in the back of this manual can be used for this measuring.

Exercise:

Using the outer edge of the scale marked "picas", measure the following line lengths and write them in the blanks.

________ With the Comp/Set 500 Phototypesetter, Input keyboarding never needs to be difficult.
________ With the Comp/Set 500 Phototypesetter, Input keyboarding never needs to
________ With the Comp/Set 500 Phototypesetter, Input
________ With the Comp/Set 500 Phototypesetter,

Primary Leading *Lesson 6*

For the same reasons that a typewriter has a single, double or triple line spacing adjustment to control the amount of space between lines, the Comp/Set phototypesetter is equipped with leading commands. The word leading is a hold-over from early printing technology. When setting type with metal, a piece of lead is placed between the lines to spread them apart.

The purpose of leading is to promote readability. It is necessary to create a channel for the eye to return, after reading a line of copy. You probably have caught yourself reading the same line over and over because of improper leading.

How is leading determined?

Leading on the Comp/Set is measured from base line to base line and is expressed in points. The leading value will generally be equal to or larger than the point size of the type. When leading is equal to the point size, the copy is said to be "set solid". Below are samples of copy set with different amounts of leading.

Leading is measured from base line to base line. The term set solid means that a leading value is equal to the point size.

↑

10 point type set on 10 point leading (10 on 10, or "set solid")

Leading is measured from base line to base line. The term set solid means that a leading value is equal to the point size.

↑

10 point type set on 11 point leading (10 on 11)
(10 point type leaded 1 point)

Leading is measured from base line to base line. The term set solid means that a leading value is equal to the point size.

↑

10 point type set on 12 point leading (10 on 12)
(10 point type leaded 2 points)

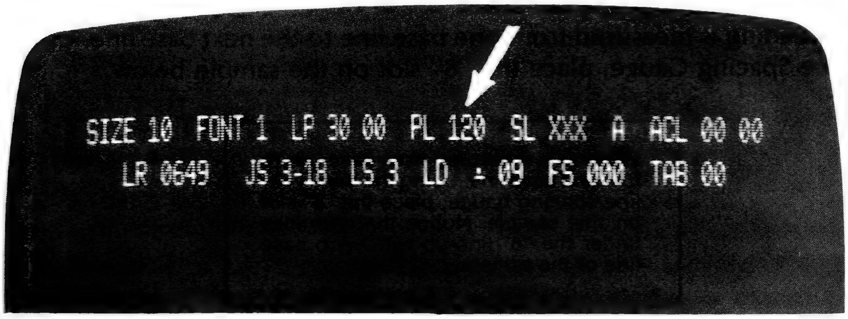
To store the primary leading value, depress the $\boxed{\text{STORE PL}}$ key (Store Primary Leading) followed by 3 digits.

The first two numbers equal full points and the third number equals one half point leading. You must enter a zero as the third number if ½ point leading is not required. Any number from 1-9 entered as the third number will give ½ point additional leading. The function field will reflect exactly the numbers you keyboard.

Example:

$\boxed{\text{STORE PL}}$ + $\boxed{0}\boxed{9}\boxed{0}$ = Primary Leading of 9 points
$\boxed{\text{STORE PL}}$ + $\boxed{1}\boxed{2}\boxed{0}$ = Primary Leading of 12 points
$\boxed{\text{STORE PL}}$ + $\boxed{1}\boxed{3}\boxed{5}$ = Primary Leading of 13½ points

When entered, the stored primary leading value is immediately displayed in the function field.



```
SIZE 10  FONT 1  LP 30 00  PL 120  SL XXX  A  ACL 00 00
  LR 0649   JS 3-18  LS 3  LD ± 09  FS 000  TAB 00
```

The primary leading command should be entered at the beginning of a job and may be changed, if required, at anytime during the job. When changed, the new primary leading value is immediately displayed in the function field.

Whenever the RET key (Return) is depressed, the typesetter will advance the paper the amount stored as the primary leading value.

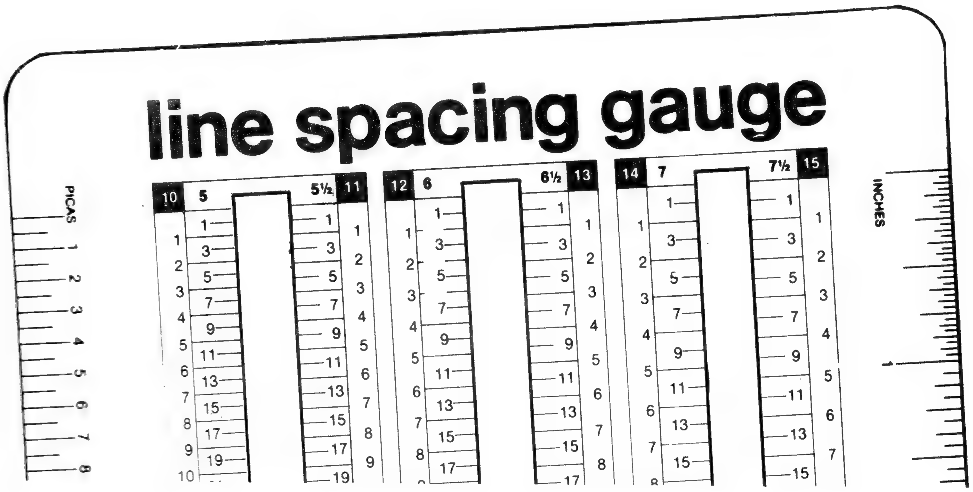
When a point size is entered which is larger than the primary leading value recorded in the function field, a warning beep will sound to alert the operator to a potential problem. The warning beep is simply a safety precaution to prevent a possible overlapping line of copy.

If the operator is not told the amount of leading to use, here are a few general rules which may be followed when determining leading:

1. Set the leading value equal to or larger than the point size used.
2. The longer the line of type—the greater the leading. A safe rule to follow is: if a line measure contains at least an alphabet and a half (26 + 13 or 39 characters) extra leading becomes desirable.
3. The design of type affects the amount of leading required for readability. For example, the type styles generally associated with newspaper work, were designed with shorter ascenders and descenders.

The space below the descenders is "built-in" leading, essential to newspaper composition. Therefore, get to know your type styles and what amount of leading looks best with each.

To match leading already set, use the "Line Spacing Gauge" supplied with this manual. The gauge is divided into several slots.



The tan areas measure the smaller amounts, the black areas indicate double the amount of the tan areas.

Leading is measured from one base line to the next base line. Using the Line Spacing Gauge, place the "8" slot on the sample below.

Leading is measured from base line to the next base line. Using the VariTyper line spacing gauge, place the **"8"** slot on this sample. Notice that the lines under the **"8"** line-up with each base line of the sample.

Notice that the lines under the "8" line-up with the base lines of the sample. Therefore the leading is 8 points.

Exercise:
Using the Line Spacing Gauge, determine the value of the leading that was used to set the following samples. Write this value on the line following each sample and indicate the keystrokes required to store this value in the phototypesetter.

> Leading is measured from base line to
> the next base line. Using the VariTyper
> line spacing gauge, place the slot

Leading Value____________points; Keystrokes____________

> Leading is measured from base line to
> the next base line. Using the VariTyper
> line spacing gauge, place the slot

Leading Value____________points; Keystrokes____________

> Leading is measured from base line to
> the next base line. Using the VariTyper
> line spacing gauge, place the slot

Leading Value____________points; Keystrokes____________

Secondary Leading

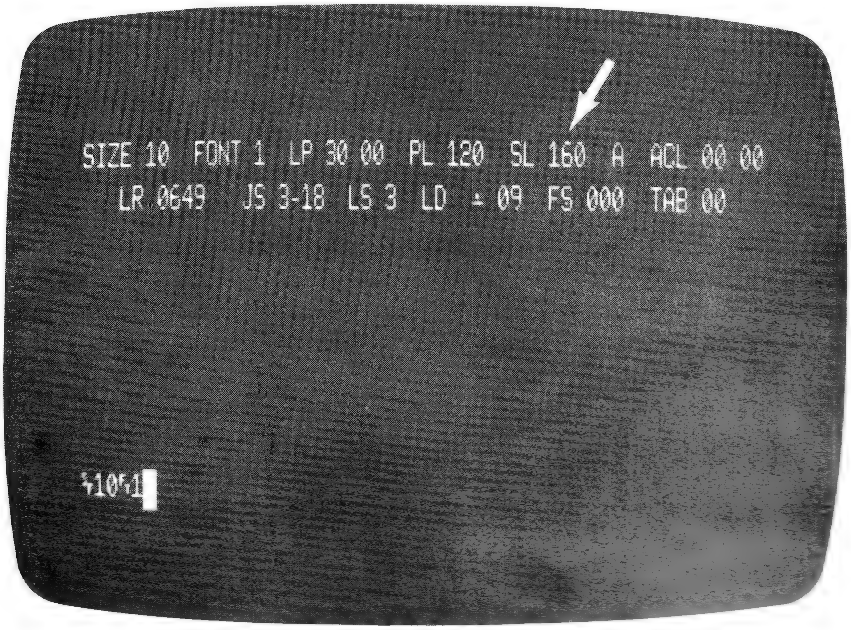
Lesson 7

Secondary leading is an additional leading function which is available for use between paragraphs, after headings, or any other time a value is needed which is different than the stored primary leading value in the function field. Of course, both primary and secondary leading values may be changed as frequently as needed in a job.

There are two keys used in conjunction with the secondary leading:

STORE SL (Store Secondary Leading) and SEC LD (Use Secondary Leading).

To store the secondary leading value, press the STORE SL key (Store Secondary Leading) followed by 3 digits. The first two numbers equal full points and the third number equals one half point leading. You must enter a zero as the third number if ½ point leading is not required. Any number from 1-9 entered as the third number will add an additional ½ point leading. When entered, the stored secondary leading value is immediately displayed in the function field exactly as you keyboard it.



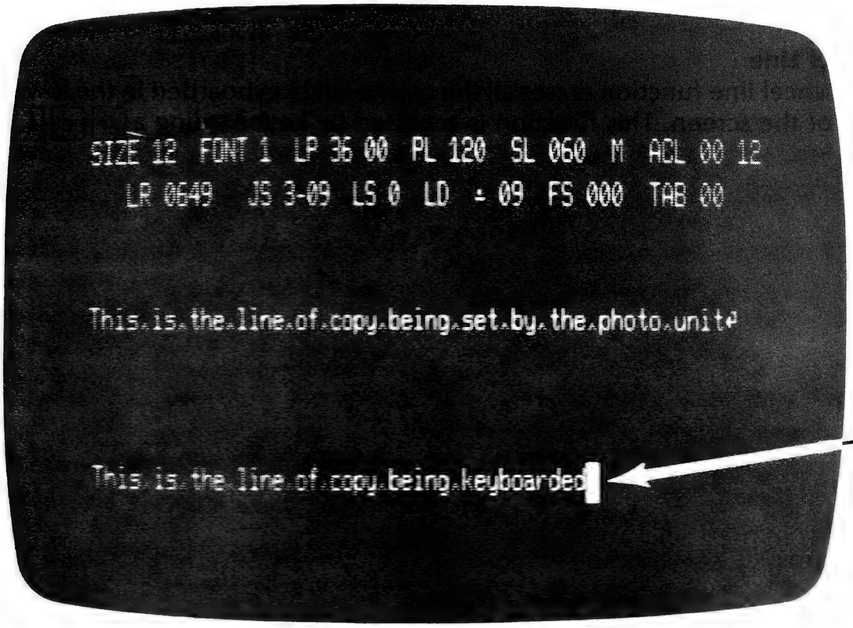
```
SIZE 10  FONT 1  LP 30 00  PL 120  SL 160  A  ACL 00 00
   LR 0649   JS 3-18  LS 3  LD ± 09  FS 000  TAB 00



101
```

The secondary leading value can be stored and changed at anytime during a job. When changed, the new secondary leading value is immediately displayed in the function field.

In Lesson 6, it was stated that whenever the return key is depressed, the typesetter will advance the paper the amount stored as the primary leading value. When secondary leading is desired at the end of a line instead of primary leading, depress the Sec Lead key (Use Secondary Leading) and then the return key. The paper will advance only the amount stored as the secondary leading value rather than the primary leading value.

The Cursor and Correcting Copy *Lesson 8*

The cursor is a rectangular box of light that indicates the point at which action takes place on the screen.



```
SIZE 12  FONT 1  LP 36 00  PL 120  SL 060  M  ACL 00 12
  LR 0649   JS 3-09  LS 0  LD  ± 09  FS 000  TAB 00


This^is^the^line^of^copy^being^set^by^the^photo^unit


This^is^the^line^of^copy^being^keyboarded
```

After filling in the function field as described in the previous lessons, the operator is then able to start typing copy onto the screen at the cursor location.

The operator can correct errors while keyboarding with the aid of the cursor left ←, cursor right →, the Single Erase key and the Word Erase key.

Word Erase WORD ERASE

When depressed, the WORD ERASE key erases the last keyboarded word—including the space that came before the word. (A word space is designated by a small pointer on the screen, "∧ ".)

This key may be used several times in succession to remove a series of words. Besides characters, any codes (e.g. font changes, size changes) included with the word will be erased.

Single Erase SINGLE ERASE

When depressed, the SINGLE ERASE key erases the last keyboarded character on a line. This key may be used several times in succession to remove a series of characters.

Rubout ← → SINGLE ERASE

To erase an extra character in a line already keyboarded, press the cursor left ← or cursor right → key to position the cursor over the error. (When the cursor is positioned at the end of a line and the cursor right key is pressed, the cursor will position at the beginning of that line.) Depress the single erase key. A rubout code will appear over the character, this will be ignored in the typeset copy. Move the cursor back to the end of the line before continuing typing.

Overwrite

Overwrite is most frequently used for transposed or incorrect characters. Overwrite, or overstrike as it is sometimes called, is accomplished by positioning the cursor over the incorrect character. The character under the cursor is then replaced with the next character keyboarded.

Cancel Line

The cancel line function erases all the copy being keyboarded in the lower area of the screen. This function is accessed by keyboarding a $\boxed{\copyright}\,\boxed{c}\,\boxed{l}$.

Justified Copy

Lesson 9

Justified copy is copy with all lines the same length, so that there are even margins on the left and right sides. The typesetter will always try to justify a line of copy unless told otherwise.

Flush Left Command FLUSH LEFT

The flush left command followed by a return tells the phototypesetter not to justify a line but to end the line and set the copy flush against the left margin.

Flush Right Command FLUSH RIGHT

The flush right command followed by a return ends a line of copy and sets it flush against the right margin.

Center Command CTR

The center command followed by a return will center copy between the left and right margins.

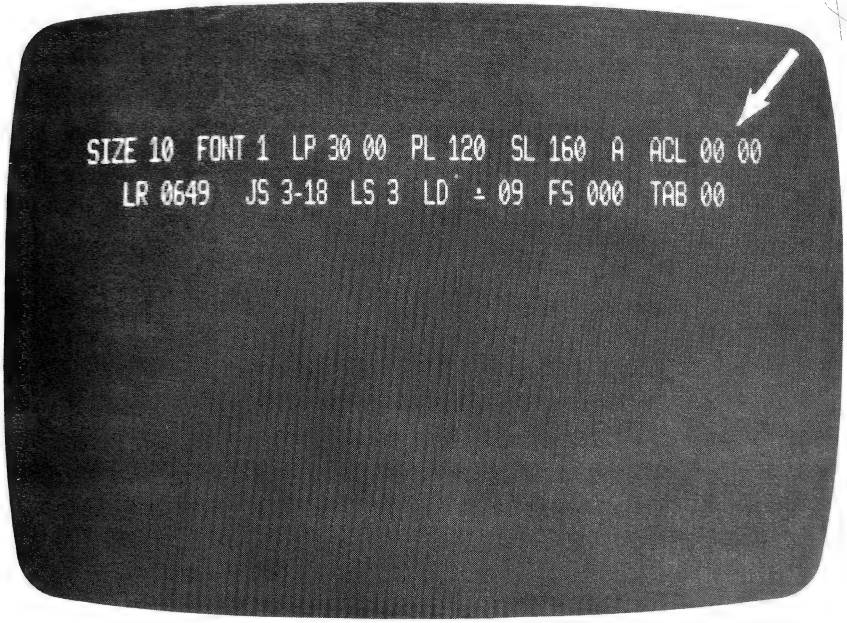
End-of-Job Command

Lesson 10

After each return, the paper advances into the take-up cassette (a light-tight box used to transport the paper from the phototypesetter to the processor for development).

At the end of a job after the last return, the operator must enter an end-of-job command to advance the paper and ensure that all copy keyboarded is into the cassette. This command requires two (2) keystrokes: [©] [e]

Once accessed, the machine automatically advances the paper approximately seven inches so that it can be cut and processed. The type disc in the machine stops spinning. The four digits in the function field after ACL indicate when the paper is advanced the full seven inches.



```
SIZE 10  FONT 1  LP 30 00  PL 120  SL 160  A  ACL 00 00
  LR 0649   JS 3-18  LS 3  LD  ± 09  FS 000  TAB 00
```

As the paper is advancing the digits will increase. When the 4 digits change to 00 00, the copy has advanced 7 inches and the operator can then cut and process the paper.

Note: Be sure not to cut the paper before the ACL = 00 00 or it could cause paper jams.

Refer to Lesson 19 for further information concerning the "ACL" area of the function field.

Keyboard a Return prior to entering an End-of-Job command, to ensure that all the copy keyboarded is typeset. Do not enter an End-of-Job command while the Comp/Set is in supershift (refer to Lesson 16).

The type disc begins to spin again when the first character is keyboarded after the [©] [e]. You do not need to wait for the disc to come up to speed to get the correct character widths.

Exercise

Lesson 11

Using the information in the past lessons, fill in the function field with the following information:

Size — 12 point
Font — medium face with underlined words in italic
Line Length — 4 inches
Leading — 14 points for text; 20 points between paragraphs

After entering the above information in the function field, keyboard a flush left return. This moves the size and font commands off the keyboarding line so that if copy is erased these commands will not be accidentally lost. This is always recommended after filling in the function field.

Type the following paragraphs. The phototypesetter will *automatically* justify the lines. Be sure to enter the codes to end each paragraph and to change the underlined words to italics.

Note: When typesetting, only enter one space at the end of each sentence.

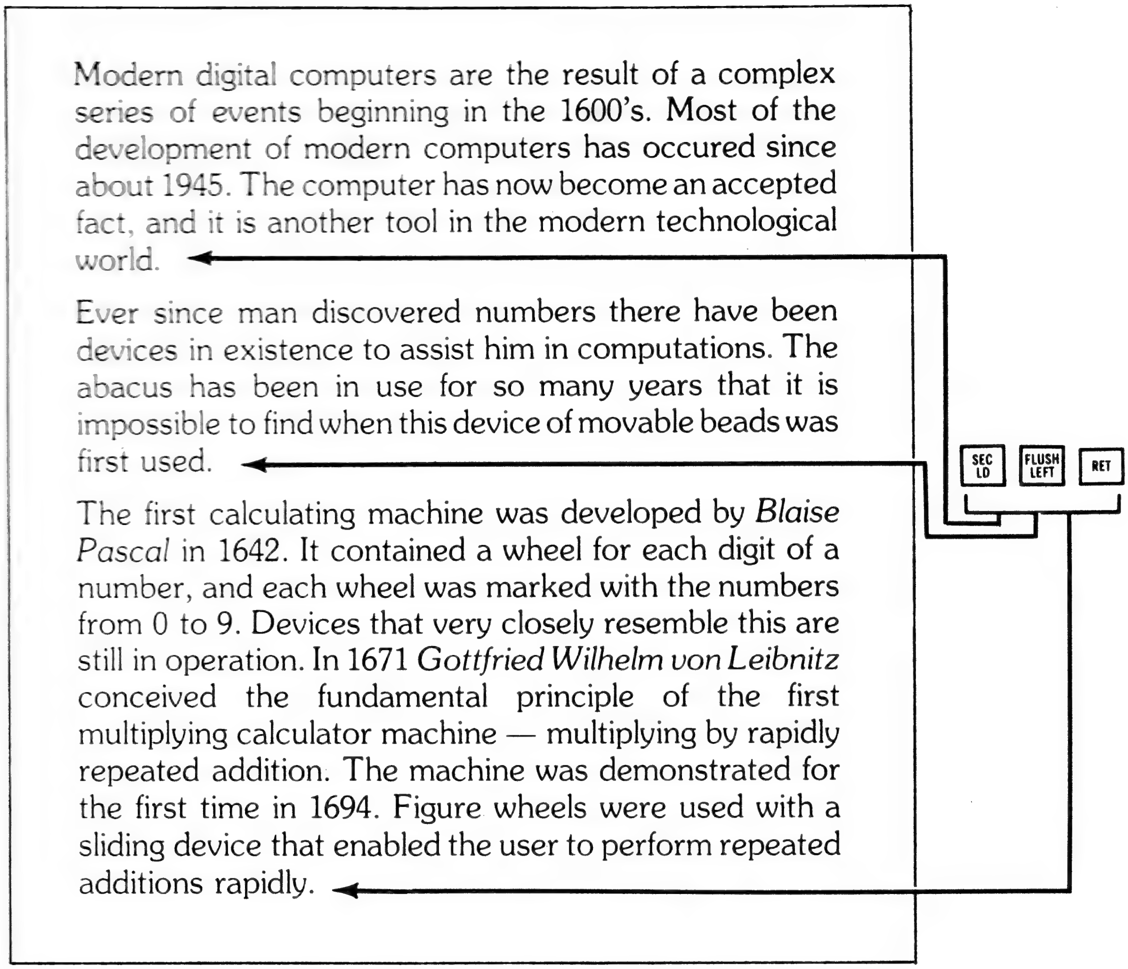
Modern digital computers are the result of a complex series of events beginning in the 1600's. Most of the development of modern computers has occured since about 1945. The computer has now become an accepted fact, and it is another tool in the modern technological world.

Ever since man discovered numbers there have been devices in existence to assist him in computations. The abacus has been in use for so many years that is is impossible to find when this device of movable beads was first used.

The first calculating machine was developed by Blaise Pascal in 1642. It contained a wheel for each digit of a number, and each wheel was marked with the numbers from 0 to 9. Devices that very closely resemble this are still in operation. In 1671 Gottfried Wilhelm von Leibnitz conceived the fundamental principle of the first multiplying calculator machine - multiplying by rapidly repeated addition. The machine was demonstrated for the first time in 1694. Figure wheels were used with a sliding device that enabled the user to perform repeated additions rapidly.

End the job with an end-of-job command. Cut and process the copy.

If you used disc VT 001 (Souvenir), your output should match the following example:



Modern digital computers are the result of a complex series of events beginning in the 1600's. Most of the development of modern computers has occured since about 1945. The computer has now become an accepted fact, and it is another tool in the modern technological world.

Ever since man discovered numbers there have been devices in existence to assist him in computations. The abacus has been in use for so many years that it is impossible to find when this device of movable beads was first used.

The first calculating machine was developed by *Blaise Pascal* in 1642. It contained a wheel for each digit of a number, and each wheel was marked with the numbers from 0 to 9. Devices that very closely resemble this are still in operation. In 1671 *Gottfried Wilhelm von Leibnitz* conceived the fundamental principle of the first multiplying calculator machine — multiplying by rapidly repeated addition. The machine was demonstrated for the first time in 1694. Figure wheels were used with a sliding device that enabled the user to perform repeated additions rapidly.

If you used a different disc, your output should resemble the above example, although your line endings might be different.

If your output does not look like this example, redo the exercise adding the commands that are indicated in this output example.

Be sure you filled in the function field correctly:

SIZE 1 2
FONT 1
LL 2 4 0 0
STORE PL 1 4 0
SEC LD 2 0 0
FLUSH LEFT RET

Also be sure you keyboarded the codes to change to/from italics correctly:

...developed by FONT 2 ^Blaise Pascal FONT 1 ^in 1642...

The Control Function Chart *Lesson 12*

The orange keys on the keyboard are "function keys" or keys which produce the structure of a job rather than the actual alphanumerics. But there are many more functions available and they are accessed by typing the © key along with a character(s).

The Control Function Chart displays a listing of all the functions that are accessed using the Control key. Some of the functions listed, have already been described and used: "store new disc widths", "end-of-job command", and "cancel line". The other functions listed will be described in the following lessons. A copy of this chart supplied in the Operator's Aids section may be removed from the manual and kept with the machine.

Note: Once the Control key is depressed, the Comp/Set is waiting for one of the alphanumerics as listed on the Control Function Chart. Until one of these character(s) is depressed, the keyboard will not accept any other keystrokes. If the Control key is accidentally depressed, depress the Control key again to cancel the command.

CONTROL FUNCTIONS

Function:	**Control key** = ©
Auto mode	© a
Manual mode	© m
Store new disc widths	© y
Line length flag-Pica/points	© d 0 (LL####)
Line length flag-Units	© d 2 (LL ####)
Line length flag-Ciceros/points	© d 1 (LL ####)
Minimum word space change	© n #
Maximum word space change	© x ##
Letterspace change	© s #
White space addition	© f # (⅛s)
White space reduction	© r # (⅛s)
Store leader character	© use leader (character)
Leader width change	© w ##
Store fixed space	© fixed space ###
Single fixed space	© z #
Indent Left	© Flush left ####
Indent Right	© Flush right ####
Indent Both	© Center ####
Cancel indents	© Center 0000
Repeat line (Manual mode only)	© Return
Add lead	© v
Reverse carriage sequence	© minus ½ unit
End of job	© e
Cancel line	© c l
Clear ACL	© k
Paper index (film/RC)	© p 0 (LL ####)
Paper index (standard)	© p 1 (LL ####)
Insert widths (parity error)	© i ###
Re-read widths (parity error)	© g

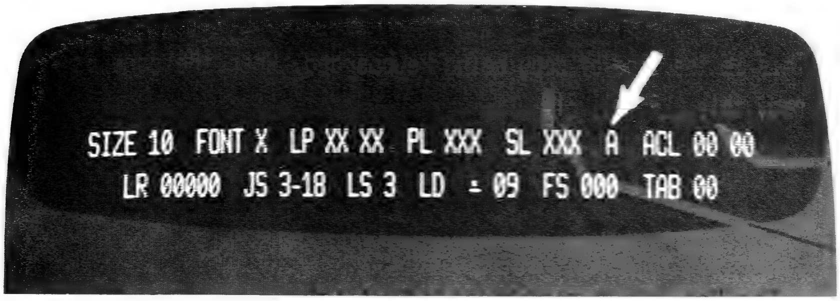
Automatic and Manual Modes *Lesson 13*

There are two ways to make end-of-line decisions on the Comp/Set phototypesetter: "automatically", where the machine decides where to end lines, and "manually" which allows the operator to enter all end-of-line returns.

Automatic Mode

While you were keyboarding the preceding exercise, the typesetter was deciding where to end each justified line. The only end-of-line decisions entered at the keyboard were for the ends-of-paragraphs. Without being aware of it you were using the Automatic Mode allowing the typesetter to automatically enter returns to end lines. As you keyboarded, the typesetter subtracted the width of each character from the overall line length. When the characters keyboarded exceed the line length, the machine automatically converted the last word space on the line into a return and carried the word that would not fit on the line to the next line.

The automatic mode will always be active after turning the machine ON or if Reset Data is depressed. If changed, a © a will restore the automatic mode. An "A" in the function field indicates the automatic mode is active.

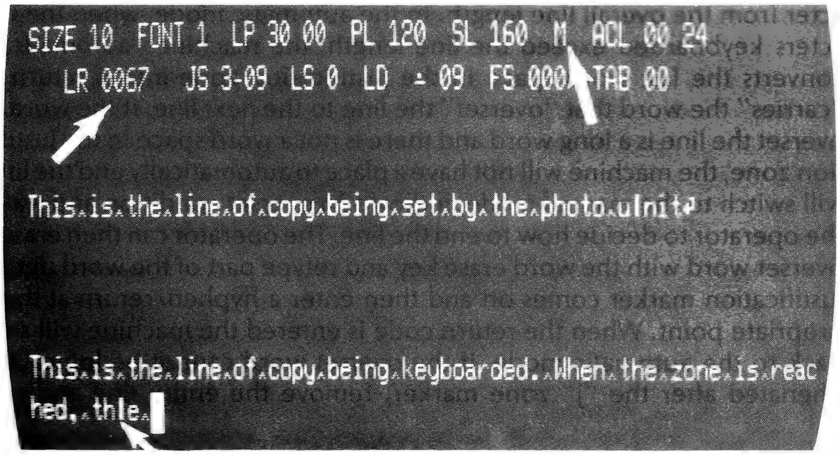


```
SIZE 10  FONT X  LP XX XX  PL XXX  SL XXX  A  ACL 00 00
   LR 00000  JS 3-18  LS 3  LD ± 09  FS 000  TAB 00
```

Manual Mode

© m changes the machine to the manual mode. The function field will indicate an "M" in place of the "A".

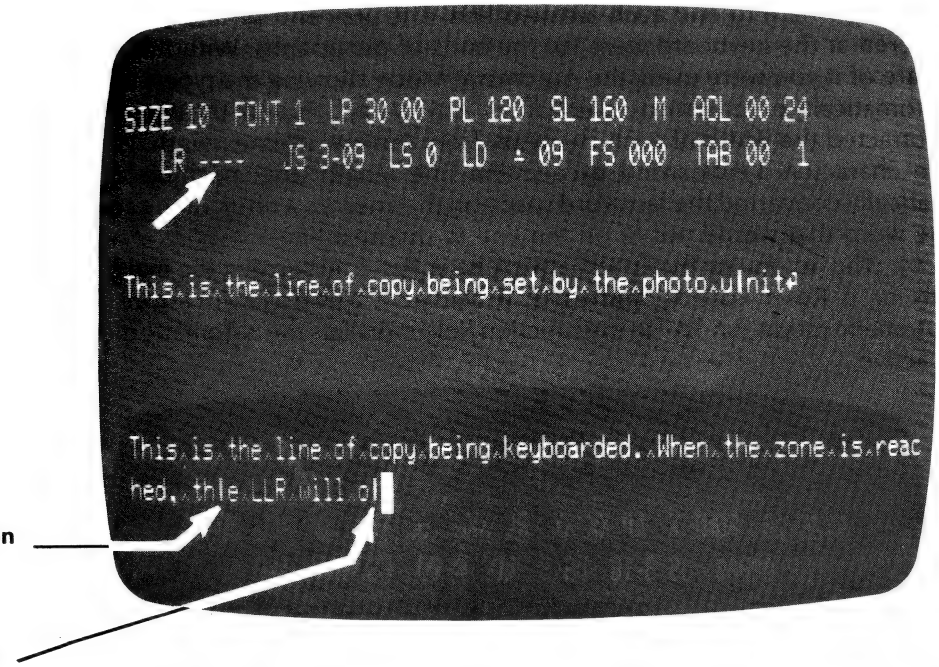
In the manual mode the operator determines when to end a line. When enough characters and word spaces have been entered on a line for the line to justify, a marker appears and a beep is sounded indicating the start of the "justification zone" (the area where a return will be entered for justified copy). At the same time, the line length remainder (LR) in the function field indicates the number of units remaining in the line.



```
SIZE 10  FONT 1  LP 30 00  PL 120  SL 160  M  ACL 00 24
   LR 0067  JS 3-09  LS 0  LD ± 09  FS 000  TAB 00


This‸is‸the‸line‸of‸copy‸being‸set‸by‸the‸photo‸uInit↵


This‸is‸the‸line‸of‸copy‸being‸keyboarded.‸When‸the‸zone‸is‸reac
hed,‸thle‸▌
```

As you keyboard the line length remainder in the function field counts down, subtracting the value of each character and space bar typed. By glancing at the line length remainder, you can determine when the remaining space is too small to allow another word to be entered. At this point enter a return.

If you type more copy on the line than will fit, a second blinker (called the overset marker) appears on the screen and a beep sounds.



```
SIZE 10  FONT 1  LP 30 00  PL 120  SL 160  M  ACL 00 24
  LR ----   JS 3-09  LS 0  LD ± 09  FS 000  TAB 00  1

This‸is‸the‸line‸of‸copy‸being‸set‸by‸the‸photo‸ulnit↵

This‸is‸the‸line‸of‸copy‸being‸keyboarded.‸When‸the‸zone‸is‸reac
hed,‸thle‸LLR‸will‸ol█
```

First Justification Blinker

Overset Blinker

The line length remainder indicates this overset condition with a negative number and the keyboard is inactive until this condition is corrected. The number in the LR is the amount of units you are overset. The easiest way to correct an overset line is to delete the last word typed using [WD ERASE]. This activates the keyboard and causes the line length remainder to recount. The last word may be hyphenated if desired before the return is keyboarded. The first marker must be on the line for the end-of-line return to cause justification.

Hyphenation Decisions in the Automatic Mode

As the operator keyboards, the typesetter subtracts the width of each character from the overall line length. In the automatic mode, when the characters keyboarded exceed the line length, the machine "automatically" converts the last word space in the justification zone into a return and "carries" the word that "overset" the line to the next line. If the word that overset the line is a long word and there is not a word space in the justification zone, the machine will not have a place to automatically end the line. It will switch to the manual mode, indicate an overset condition and wait for the operator to decide how to end the line. The operator can then erase the overset word with the word erase key and retype part of the word until the justification marker comes on and then enter a hyphen/return at the appropriate point. When the return code is entered the machine will switch back to the automatic mode. If the overset word cannot be logically hyphenated after the "j" zone marker, remove the entire line and either decrease the minimum word space value (Lesson 14), increase the maximum word space value (Lesson 14), or use White Space Reduction (Lesson 22), or use White Space Addition (Lesson 22) to enable the line to justify.

Note: Any line which is ended before the justification zone marker, will be considered an "underset" or short line and will be set flush left.

Why Automatic and Manual Modes?

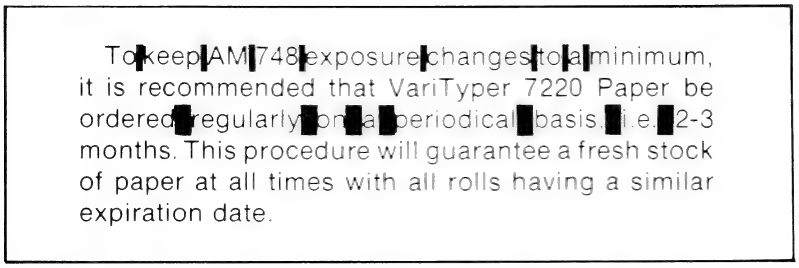
The automatic mode is generally a "faster" mode when producing justified copy. Because end of line decisions are made by the machine, the operator can concentrate on typing accurately.

The Manual Mode forces the operator to examine the line before allowing it to be set, thus allowing complete control over how a line "looks".

Minimum and Maximum Word Space Values *Lesson 14*

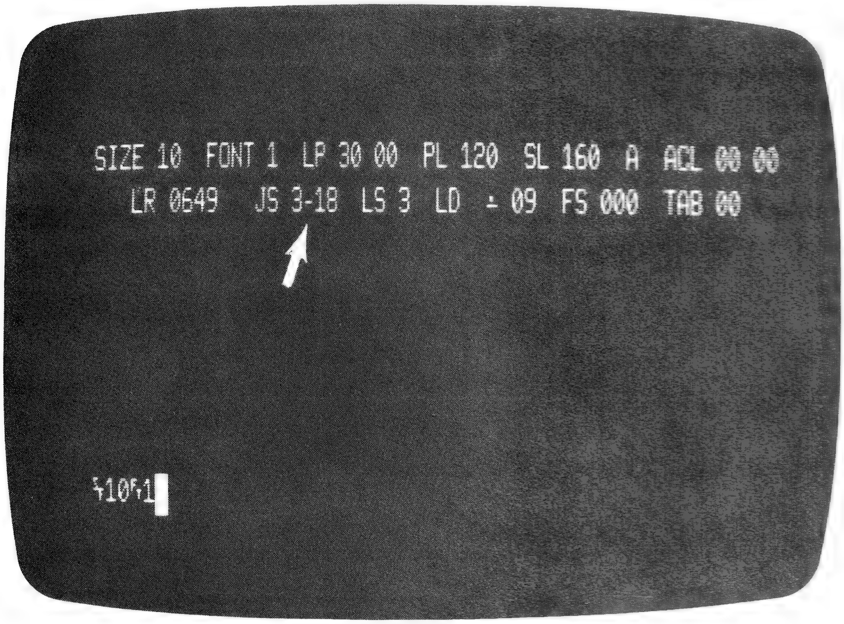
In justified copy a word space is not always the same size. The width of the word spaces are variable allowing the line to expand to produce even left and right hand margins. The "extra" space is evenly distributed to all word spaces in the line to permit justification.

Example: Compare the size of the word space in line 1 to line 3.



To keep AM 748 exposure changes to a minimum, it is recommended that VariTyper 7220 Paper be ordered regularly on a periodical basis, i.e. 2-3 months. This procedure will guarantee a fresh stock of paper at all times with all rolls having a similar expiration date.

After pressing Reset Data or when the Comp/Set is initially turned ON, the minimum word space is 3, the maximum word space is 18, and is displayed in the function field accordingly.



```
SIZE 10  FONT 1  LP 30 00  PL 120  SL 160  A  ACL 00 00
   LR 0649   JS 3-18  LS 3  LD ± 09  FS 000  TAB 00



ϟ10ϟ1
```

This means that while copy is being entered on the screen, the machine calculates with a minimum of 3 units, and a maximum of 18 units of space for each word space in a line. (If a flush or center command is entered, the machine automatically doubles the minimum word space for the value of the word spaces in that line).

Note: A word on a line by itself without any word spaces will not justify.

The minimum and maximum word space values can be changed at the beginning of any line.

Minimum Space value = © n #
Maximum Space value = © x # #

The minimum word space value is generally changed to create a special affect, e.g. increased to give copy more of an "airy" look; or it may be decreased for copyfitting purposes (allowing more copy to fit on one line).

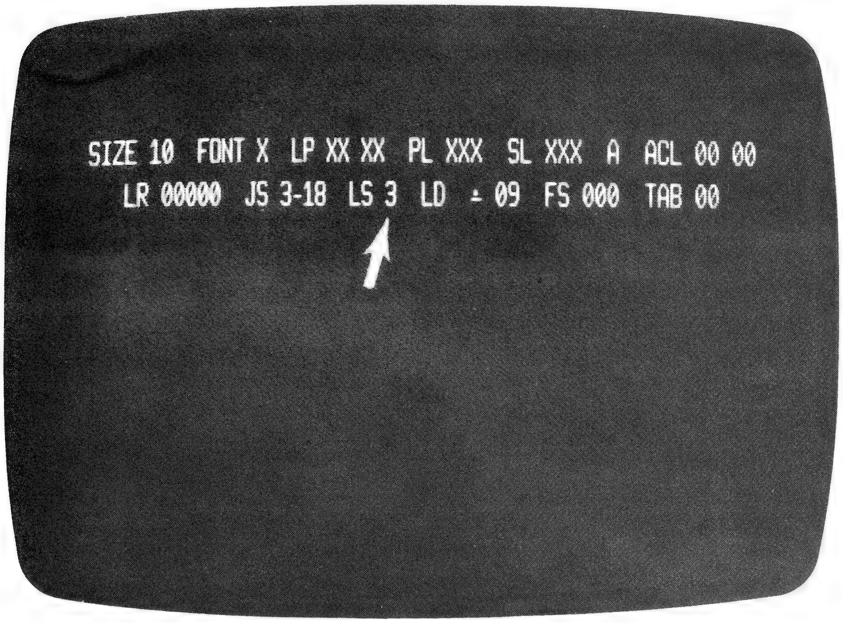
The maximum word space is generally changed when working in the automatic mode. In the manual mode the operator has control over where a line will end, but in the automatic mode the machine has control over the way a line will look when set. When these types of controls are turned over to a computer, it becomes necessary to give it rules for the tightness of lines. By decreasing the maximum word space value more hyphenation decisions will probably have to be made by the operator and tighter copy will result. (Decreasing the maximum word space value to 9 provides the tight line preferred in some types of work such as magazine columns or ads.)

Note: The maximum word space must be larger than the minimum word space and cannot be larger than the line length entered.

The minimum and maximum word space values determine where the "justification zone" marker will appear in a line. Generally the tighter the parameters, the closer the "justification zone" marker will be to the end of the line.

Letterspacing *Lesson 15*

The phototypesetter will insert space between each character on a line in order for the line to justify. This insertion of space is called letterspacing and is completely controllable from the keyboard. After pressing Reset Data or when the Comp/Set is initially turned ON, the letterspacing value is indicated in the function field as 3 units.



```
SIZE 10  FONT X  LP XX XX  PL XXX  SL XXX  A  ACL 00 00
   LR 00000  JS 3-18  LS 3  LD ± 09  FS 000  TAB 00
```

This means that the Comp/Set Phototypesetter will insert up to 3 units of space between each character if necessary to justify a line. (It will only add space if copy comes at least to the first justification marker.) This value can be changed at the beginning of any line.

Letterspace change = © s #

A zero will prevent all letterspacing.

The letterspacing value helps determine where the "justification zone" marker will appear in a line, and thus the number of hyphenation decisions that will be made in the automatic mode. Generally the smaller the letterspacing, the closer the "justification zone" marker will be to the end of the line and more hyphenation decisions will be made in the automatic mode.

Case and Disc Formats

Lesson 16

Lower Case (LC) Unshift

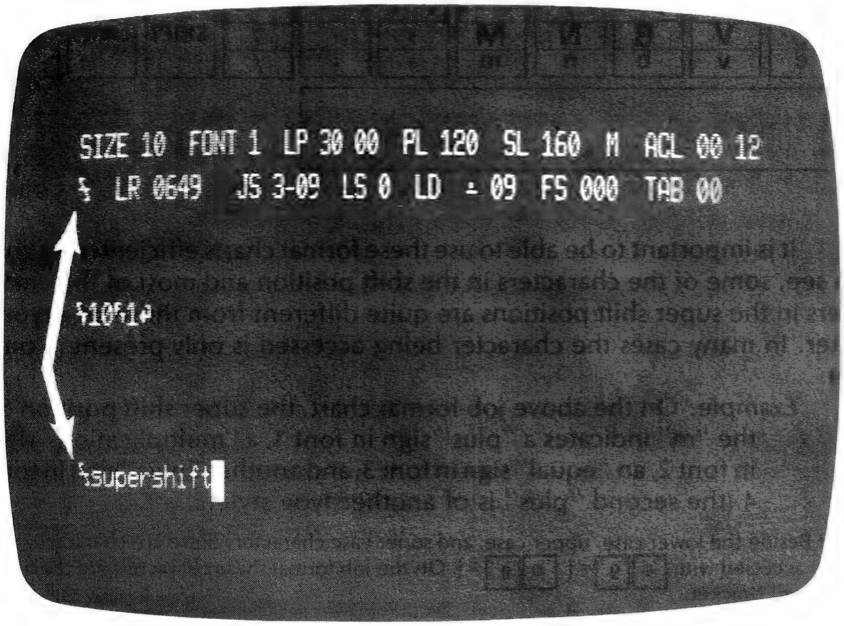
Any time shift or super shift is NOT used, all characters that follow are to be lower case. Lower case characters are the same as the unshift position on a typewriter.

Upper Case (UC) Shift [SHIFT] [SHIFT LOCK]

The upper case command tells the phototypesetter all characters that follow are to be upper case. The upper case position is the same as the shift position on a typewriter.

Super Case (SC) Super Shift [SUPER SHIFT]

On the Comp/Set type discs, there are 112 characters in each of the four fonts. The standard alpha-numeric keyboard consists of 43 unshift characters and 43 shift characters totaling 86 characters. To use the extra 26 characters available on the Comp/Set disc, a super shift position is used. Super shift characters are usually small caps, auxiliary (or special characters), symbols or superior numbers. The super shift command tells the typesetter that all characters that follow are to be in super case. When the Super Shift key is depressed, an "ss" will appear in the copy on the screen.



```
SIZE 10  FONT 1  LP 30 00  PL 120  SL 160  M  ACL 00 12
ss LR 0649  JS 3-09  LS 0  LD ± 09  FS 000  TAB 00

ss10ss14

sssupershift
```

All characters following the "ss" indication will be in Super Shift. *The Super Shift key must be pressed again to bring the typesetter back to the lower case or unshift character position.*

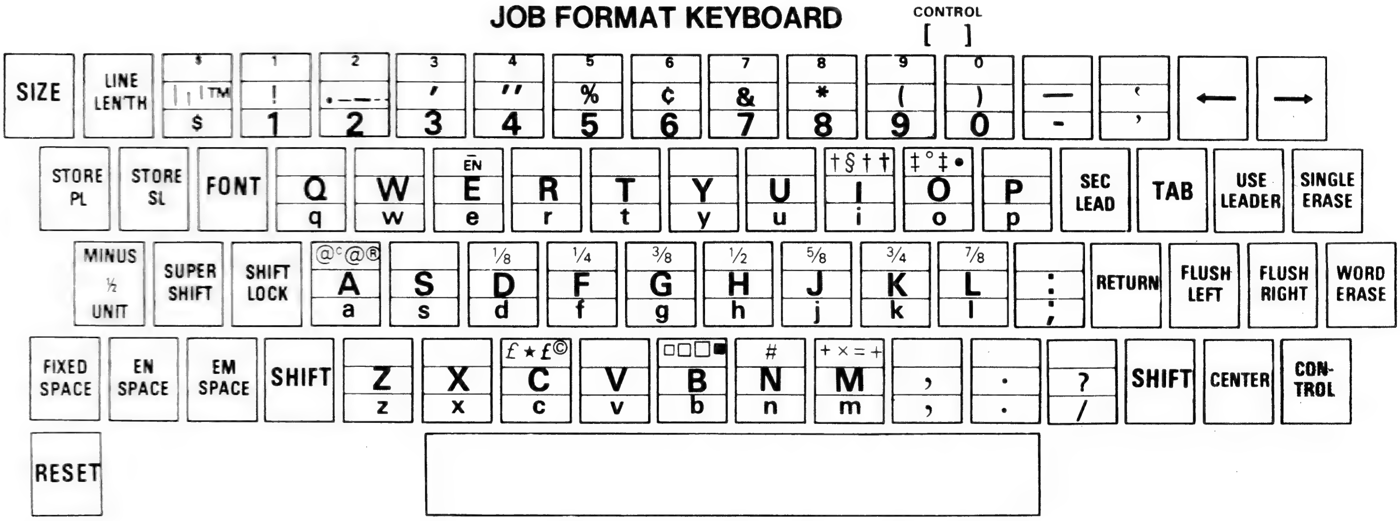
A Super Shift symbol (ss) will also appear in the lower left corner of the function field when the Super Shift key is depressed. This symbol will remain as long as the Comp/Set is in Super Shift. A second depression of the Super Shift key will clear the "ss" from the function field. Do not keyboard an "end-of-job" command [©] [e] while the Comp/Set is in the super shift position.

Notice that the Super Shift key is printed in grey. It corresponds to the grey fractions on the keyboard. An operator can keyboard any fraction available without consulting a format chart.

Format Charts
Each type disc is designed in a format and is labeled accordingly. Look at your type discs to determine what the format is (the format is designated in the center of the type disc above the listing of the 4 fonts). The following sample is for a Job Format.

COMP/SET

JOB FORMAT KEYBOARD


CONTROL
[ ]
SIZE
LINE LENTH
| ı ı TM $
! 1
•–—‐ 2
' 3
'' 4
% 5
¢ 6
& 7
* 8
(9
) 0
— -
' '
←
→
STORE PL
STORE SL
FONT
Q q
W w
EN E e
R r
T t
Y y
U u
†§†† I i
‡°‡• O o
P p
SEC LEAD
TAB
USE LEADER
SINGLE ERASE
MINUS ½ UNIT
SUPER SHIFT
SHIFT LOCK
@ᶜ@® A a
S s
⅛ D d
¼ F f
⅜ G g
½ H h
⅝ J j
¾ K k
⅞ L l
: ;
RETURN
FLUSH LEFT
FLUSH RIGHT
WORD ERASE
FIXED SPACE
EN SPACE
EM SPACE
SHIFT
Z z
X x
£★£© C c
V v
□□□■ B b
# N n
+×=+ M m
, ,
. .
? /
SHIFT
CENTER
CON-TROL
RESET

It is important to be able to use these format charts efficiently. As you can see, some of the characters in the shift position and most of the characters in the super shift positions are quite different from those on a typewriter. In many cases the character being accessed is only present in one font.

Example: On the above job format chart, the super shift position of the "m" indicates a "plus" sign in font 1, a "multiplication" sign in font 2, an "equal" sign in font 3, and another "plus" sign in font 4 (the second "plus" is of another type style).

Note: Beside the lower case, upper case, and super case characters there are characters that can be accessed with © 9 = [© 0 =]. On the job format these characters are the open and closed bracket.

Another format chart that may be helpful is the "Character Width/ Keyboard Location Chart". This chart arrives with each disc and displays all the characters in the actual styles that are on the disc. A "Character Width/ Keyboard Location Chart" for disc VT 002 is on the last page of this lesson for your reference. (The small numbers beside each character indicate the width of the character in units.)

Review Exercise

Keyboard the following exercise using a Job Format Disc. Adjust the exercise if necessary to correspond with an available disc.

☐ ☐ ☐ ☐ ☐

CLOSE-OUT SALE!

• Beds •

• Tables •

• Chairs •

• Royal™ Carpets •

Come in and browse!

☐ ☐ ☐ ☐ ☐

Character Width/Keyboard Location Chart

VT 002
Job Format
Font 1 7-69 Megaron Medium
Font 2 7-70 Megaron Medium Italic
Font 3 7-71 Megaron Bold
Font 4 7-72 Megaron Bold Italic

Lower case				Upper case				Super case				Control			
1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
a 10	a 10	a 10	a 10	A 13	A 13	A 13	A 13	@ 18	$^{¢}$ 06	@ 18	® 12				
b 11	b 11	b 11	b 11	B 13	B 13	B 13	B 13	□ 14	□ 14	□ 14	■ 12				
c 10	c 10	c 10	c 10	C 14	C 14	C 14	C 14	£ 10	★ 12	£ 10	© 12				
d 11	d 11	d 11	d 11	D 14	D 14	D 14	D 14	⅛ 14	⅛ 14	⅛ 14	⅛ 14				
e 10	e 10	e 10	e 10	E 12	E 12	E 12	E 12	− 09	− 09	− 09	− 09				
f 06	f 06	f 06	f 06	F 11	F 11	F 11	F 11	¼ 14	¼ 14	¼ 14	¼ 14				
g 11	g 11	g 11	g 11	G 15	G 15	G 15	G 15	⅜ 14	⅜ 14	⅜ 14	⅜ 14				
h 11	h 11	h 11	h 11	H 14	H 14	H 14	H 14	½ 14	½ 14	½ 14	½ 14				
i 05	i 05	i 05	i 05	I 06	I 06	I 06	I 06	† 10	§ 10	† 10	† 10				
j 05	j 05	j 05	j 05	J 10	J 10	J 10	J 10	⅝ 14	⅝ 14	⅝ 14	⅝ 14				
k 10	k 10	k 10	k 10	K 13	K 13	K 13	K 13	¾ 14	¾ 14	¾ 14	¾ 14				
l 05	l 05	l 05	l 05	L 11	L 11	L 11	L 11	⅞ 14	⅞ 14	⅞ 14	⅞ 14				
m 16	m 16	m 16	m 16	M 16	M 16	M 16	M 16	+ 10	× 10	= 10	+ 10				
n 11	n 11	n 11	n 11	N 14	N 14	N 14	N 14	# 10	# 10	# 10	# 10				
o 11	o 11	o 11	o 11	O 15	O 15	O 15	O 15	‡ 10	° 10	‡ 10	● 10				
p 11	p 11	p 11	p 11	P 12	P 12	P 12	P 12	^{1} 06	^{1} 06	^{1} 06	^{1} 06				
q 11	q 11	q 11	q 11	Q 15	Q 15	Q 15	Q 15	^{2} 06	^{2} 06	^{2} 06	^{2} 06				
r 07	r 07	r 07	r 07	R 13	R 13	R 13	R 13	^{3} 06	^{3} 06	^{3} 06	^{3} 06				
s 09	s 09	s 09	s 09	S 12	S 12	S 12	S 12	^{4} 06	^{4} 06	^{4} 06	^{4} 06				
t 06	t 06	t 06	t 06	T 12	T 12	T 12	T 12	^{5} 06	^{5} 06	^{5} 06	^{5} 06				
u 11	u 11	u 11	u 11	U 14	U 14	U 14	U 14	^{6} 06	^{6} 06	^{6} 06	^{6} 06				
v 09	v 09	v 09	v 09	V 12	V 12	V 12	V 12	^{7} 06	^{7} 06	^{7} 06	^{7} 06				
w 14	w 14	w 14	w 14	W 17	W 17	W 17	W 17	^{8} 06	^{8} 06	^{8} 06	^{8} 06				
x 10	x 10	x 10	x 10	X 12	X 12	X 12	X 12	^{9} 06	^{9} 06	^{9} 06	^{9} 06				
y 10	y 10	y 10	y 10	Y 12	Y 12	Y 12	Y 12	^{0} 06	^{0} 06	^{0} 06	^{0} 06				
z 09	z 09	z 09	z 09	Z 12	Z 12	Z 12	Z 12	$^{\$}$ 06	$^{\$}$ 06	$^{\$}$ 06	$^{\$}$ 06				
. 05	. 05	. 05	. 05	. 05	. 05	. 05	. 05								
, 05	, 05	, 05	, 05	, 05	, 05	, 05	, 05								
’ 04	’ 04	’ 04	’ 04	‘ 04	‘ 04	‘ 04	‘ 04								
- 07	- 07	- 07	- 07	— 18	— 18	— 18	— 18								
; 05	; 05	; 05	; 05	: 05	: 05	: 05	: 05								
/ 07	/ 07	/ 07	/ 07	? 10	? 10	? 10	? 10								
$ 10	$ 10	$ 10	$ 10	¦ 04	| 04	| 04	™ 12	$^{\$}$ 06	$^{\$}$ 06	$^{\$}$ 06	$^{\$}$ 06				
1 10	1 10	1 10	1 10	! 05	! 05	! 05	! 05	^{1} 06	^{1} 06	^{1} 06	^{1} 06				
2 10	2 10	2 10	2 10	. 09	_ 09	_ 09	'.. 09	^{2} 06	^{2} 06	^{2} 06	^{2} 06				
3 10	3 10	3 10	3 10	′ 05	′ 05	′ 05	′ 05	^{3} 06	^{3} 06	^{3} 06	^{3} 06				
4 10	4 10	4 10	4 10	″ 09	″ 09	″ 09	″ 09	^{4} 06	^{4} 06	^{4} 06	^{4} 06				
5 10	5 10	5 10	5 10	% 15	% 15	% 15	% 15	^{5} 06	^{5} 06	^{5} 06	^{5} 06				
6 10	6 10	6 10	6 10	¢ 10	¢ 10	¢ 10	¢ 10	^{6} 06	^{6} 06	^{6} 06	^{6} 06				
7 10	7 10	7 10	7 10	& 13	& 13	& 13	& 13	^{7} 06	^{7} 06	^{7} 06	^{7} 06				
8 10	8 10	8 10	8 10	* 08	* 08	* 08	* 08	^{8} 06	^{8} 06	^{8} 06	^{8} 06				
9 10	9 10	9 10	9 10	(07	(07	(07	(07	^{9} 06	^{9} 06	^{9} 06	^{9} 06	[07	[07	[07	[07
0 10	0 10	0 10	0 10	) 07	) 07	) 07	) 07	^{0} 06	^{0} 06	^{0} 06	^{0} 06	] 07	] 07	] 07	] 07

The purpose of this character width/keyboard location chart is to aid the operator in locating infrequently used characters on the keyboard, and identifying the unit width of any character. For accurate representation of these characters, consult specimen pages in the Catalog of Phototypesetting Type Faces.

Fixed Spaces

Lesson 17

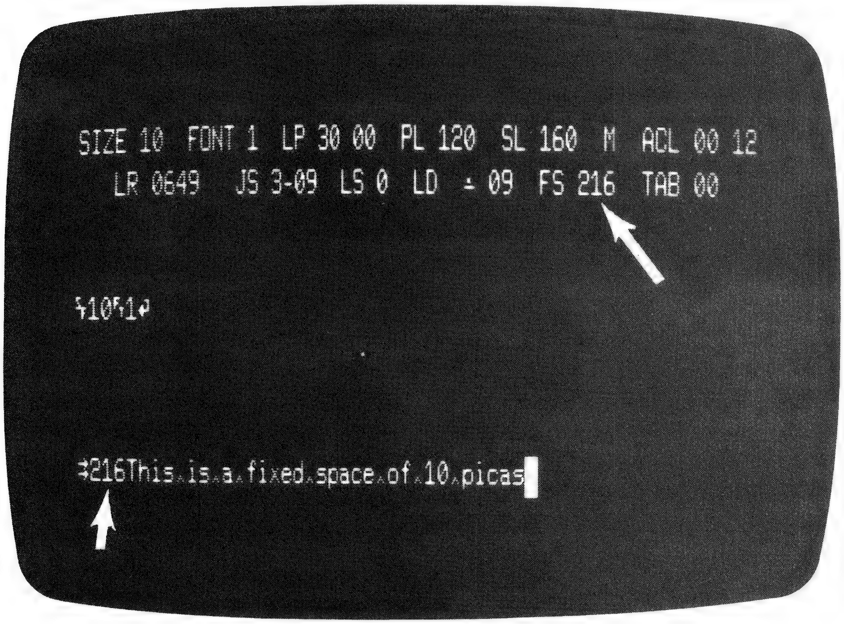
As explained earlier, the width of a word space is variable. It can be expanded to justify a line. A *fixed space* cannot be expanded. It is a specified value, similar to the character widths, and the phototypesetter will not expand it to justify a line. To have a consistent indent at the beginning of paragraphs, you must use a fixed space.

Em Space (EM)
The EM space [EM SPACE] is 18 units wide. This is the widest standard fixed space and is often used for indents, such as the beginning of a paragraph. (Many typesetters call the EM space a "Mutt".)

En Space (EN)
The EN space [EN SPACE] is 9 units wide. It is often used in combinations with the EM space for varied indents. It is also used for creating larger word spaces, such as between words of a heading set in all caps. (Many typesetters call the EN space a "Nut".)

Store Fixed Space Command
The Em Space and En Space are the most commonly used fixed space values, but obviously cannot handle all the different requirements for fixed space values. Example: How would I access 20 units of space? For this reason a programmable fixed space key is located on the keyboard. Different values of fixed space may be stored on this key, and the value stored is displayed in the second line of the function field. To store a value on the fixed space key, keyboard:

[©] + [FIXED SPACE] + [2][1][6] = Fixed space of 216 units



```
SIZE 10  FONT 1  LP 30 00  PL 120  SL 160  M  ACL 00 12
  LR 0649   JS 3-09  LS 0  LD ± 09  FS 216  TAB 00

ʃ10ʃ1↵

⇉216This‸is‸a‸fixed‸space‸of‸10‸picas
```

The value stored will immediately display in the function field. Fixed space stored value must always be entered in units and can be stored at anytime in a line.

Once stored, the Fixed Space will be entered into a job each time the Fixed Space key is depressed. There is no limit to the number of different fixed space values that can be used in a line or tab column.

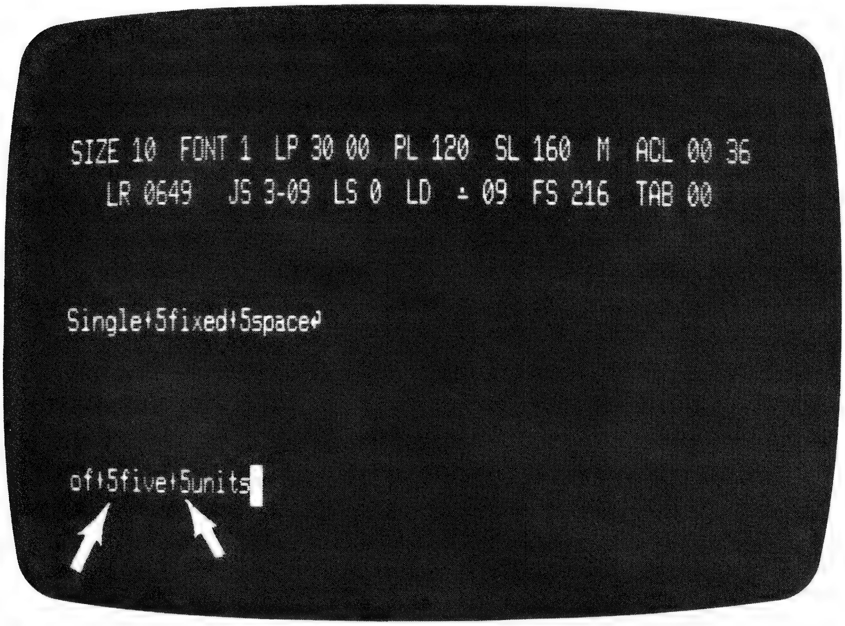
Single Fixed Space

The Single Fixed Space command is another method of accessing a fixed space value. It is probably most valuable as a "one time only" fixed space. It is not stored and must be re-entered whenever needed. To enter a Single Fixed Space command keyboard:

$\boxed{\copyright}\,\boxed{z}\,\boxed{\#}$

A fixed space in units equal to the value of the digit will be entered in the job. This command does not affect the programmable fixed space key.

$\boxed{\copyright} + \boxed{z} + \boxed{5}$ = 5 units of fixed space



```
SIZE 10  FONT 1  LP 30 00  PL 120  SL 160  M  ACL 00 36
  LR 0649   JS 3-09  LS 0  LD  ± 09  FS 216  TAB 00


Single⇂5fixed⇂5space↵


of⇂5five⇂5units█
```

The fixed space commands can be used in any combination and as many times as desired on a line.

Suggestions for using the Fixed Space Commands

You may be told to indent 5 Em's at the beginning of each paragraph for a job. This means that at the beginning of each paragraph you would depress the Em Space key five times prior to keyboarding the paragraph.

Another method would be to store a value on the Fixed Space key equal to depressing 5 Em's. What would that value be?____________ What keystrokes would be involved in storing the value?____________ + ____________ + ____________. What key would you depress at the beginning of each paragraph to access the value stored?____________.

Perhaps the indent value will be given to you in picas. Example: "Indent each paragraph 2 picas". Since the fixed space commands must be entered in units it is then necessary for you to convert 2 picas into units. This value can be determined at the keyboard. The value in units of 2 picas is dependent on the size of type being used.

> Keyboard: Size 10, Line Length 2 picas. The line length remainder in the function field will indicate the number of units there are in 2 picas at 10 point type. What value is in the line length remainder area?____________. Now change the size of type to 14 point. Enter a return so that the function field indicates a Size 14 and can re-calculate the line length remainder. What is the new line length remainder value?__________ .

Automatic Indents

Lesson 18

Automatic indents gives the operator the ability to enter an indent command once at the beginning of the copy to be indented and then the indent will continue automatically until cancelled. This command is extremely useful for run-arounds (copy set "around" a photo or artwork). The indent can be used from the left margin, the right margin, or from both sides at once.

Indent Left [©] [FLUSH LEFT] [#] [#] [#] [#]
The indent left command is followed by four digits representing the amount of space to move from the left margin while setting type.

Indent Right [©] [FLUSH RIGHT] [#] [#] [#] [#]
The indent right command is followed by four digits representing the amount of space to move from the right margin while setting type.

Indent Both [©] [CENTER] [#] [#] [#] [#]
The indent both command is followed by four digits representing the amount of space to move from both the left and right margins while setting type.

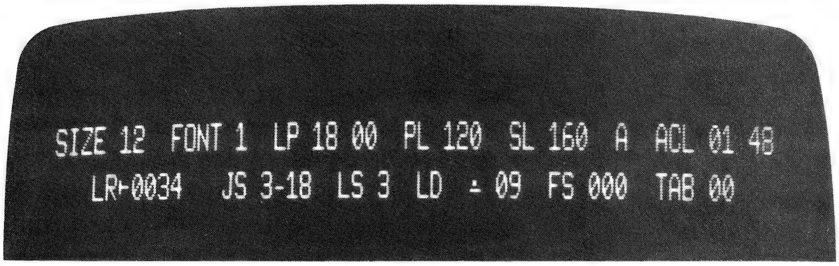
Indents may be conveniently entered either in picas/points, units, or ciceros/points. The Comp/Set Phototypesetter will know if the number entered represents picas/points, ciceros/points, or units by the indication in the line length section of the function field (LP, LC or LU—refer to Lesson 29, Line Length in Units and Ciceros). The 4 digit indent value is entered in exactly the same manner as a line length command. Example: "Control + Flush Left + 0500" would move the left margin in 5 picas, if the Line Length in the function field was in picas and points. If the line length is in "units", the value would then be 500 units. If the line length is in Ciceros, then the indent value would be 5 ciceros.

When an indent command is entered, the value is subtracted in the line length remainder in the function field. A flush symbol appears between the LR and its digits to correspond to the particular indent entered. A flush left symbol appears for an indent left, a flush right symbol appears for an indent right, and a center symbol appears for an indent both or if both the indent left and indent right are entered separately.

Indents can only be entered at the beginning of a line and occur immediately. Do not enter an indent after the first character or fixed space on a line.

All indents are cancelled by entering the Cancel All Indents command [©] [CENTER] [0] [0] [0] [0] .Cancel the indent after the return of the last line to be indented.

Exercise: Keyboard the paragraphs in Lesson 11. Indent each paragraph 1½ picas.



```
SIZE 12  FONT 1  LP 18 00  PL 120  SL 160  A  ACL 01 48
  LR⊢0034  JS 3-18  LS 3  LD ∸ 09  FS 000  TAB 00
```

Accumulated Leading *Lesson 19*

While keyboarding a job, the ACL (Accumulated Leading) values in the top line of the function field increases with each line set. The first two digits equal inches and the last two represent points. Each time an end-of-line is read by the phototypesetter, the numbers will advance the amount of leading being used. An "end-of-job" command will automatically set this value to zero.

The accumulated leading can be very useful to set pages of copy all at the same page depth. Rather than processing the copy after each page, the operator can reset the accumulated leading counter by entering: $\boxed{\copyright}$ + $\boxed{\mathbf{k}}$

Leaders

Lesson 20

Leaders are generally dashes, dots or ruled lines that are used as reference lines between copy. On a typewriter these dots are put in one at a time and manually aligned. The Comp/Set Phototypesetter greatly simplifies this process. The operator can automatically fill a line to the specified line length with leader characters with one keystroke—Use Leader key. USE LDR

Example:

If you are in font 1, keyboard: CHAPTER FOUR USE LDR RET
The phototypesetter will print . . . .

If you are in font 1, keyboard USE LDR 143, RET
The phototypesetter will print . . . .

If you are in font 1, keyboard: CHAPTER FOUR,
USE LDR 143 RET
The phototypesetter will print . . . .

CHAPTER FOUR . . . .

. 143

CHAPTER FOUR 143

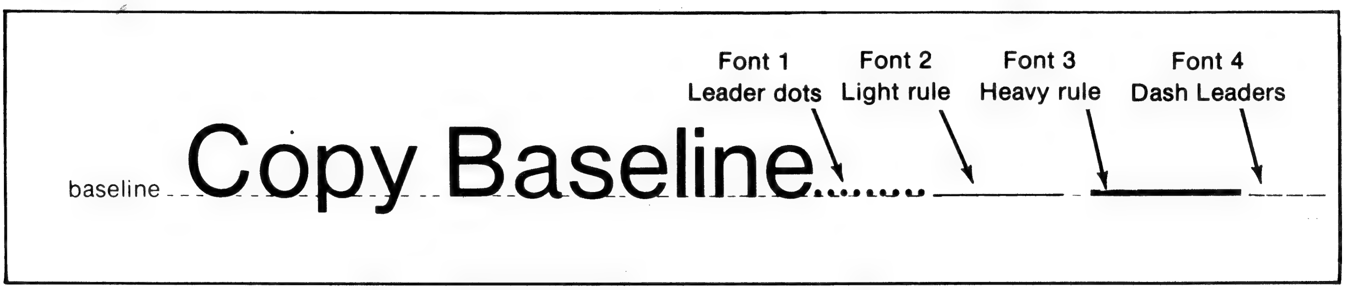
The leader characters automatically align vertically with each other.

The leader dot in the above sample is not a period, but rather a unique character designed specifically for leadering. It is located on the shift of the figure 2 key in font 1. In font 2 is a medium rule character, font 3 is a bold rule, and font 4 is the dash leader. Each of these characters is accessible as a leader character simply by changing fonts before the "Use Leader" command. If you keyboard:

FONT 1 Copy USE LDR Copy RET = Copy .Copy
FONT 2 USE LDR RET = ________________________________
FONT 3 USE LDR RET = ________________________________
FONT 4 USE LDR RET = --

It's important to note that the leader dot and rule segment are positioned on the base line of the type.

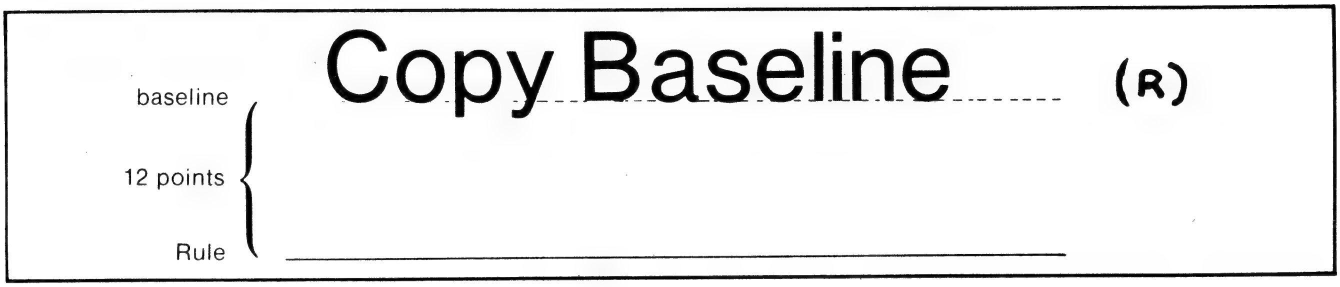
Example:



Frequently, you will need to position a ruled line slightly below the last line of copy.

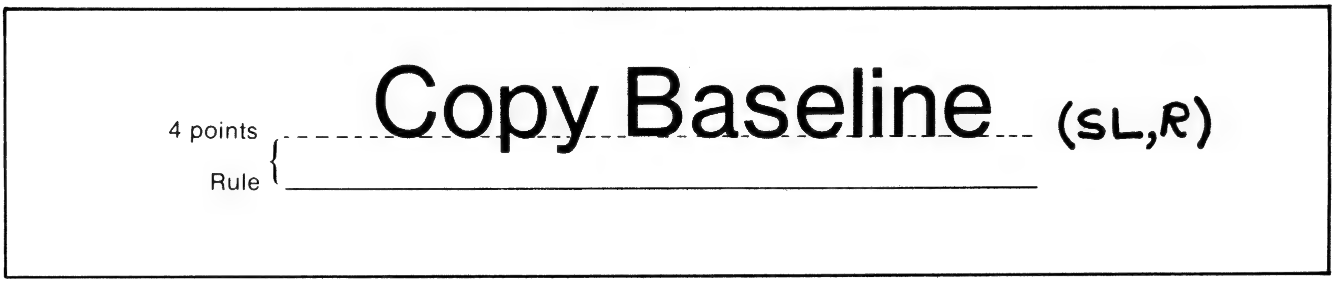
Assuming this is 12 point type set solid, to set a ruled line just below the words *Copy Baseline*, a smaller leading value than 12 points would be required. If 12 points of leading were used, the ruled line would be set too far below the copy.

Example:



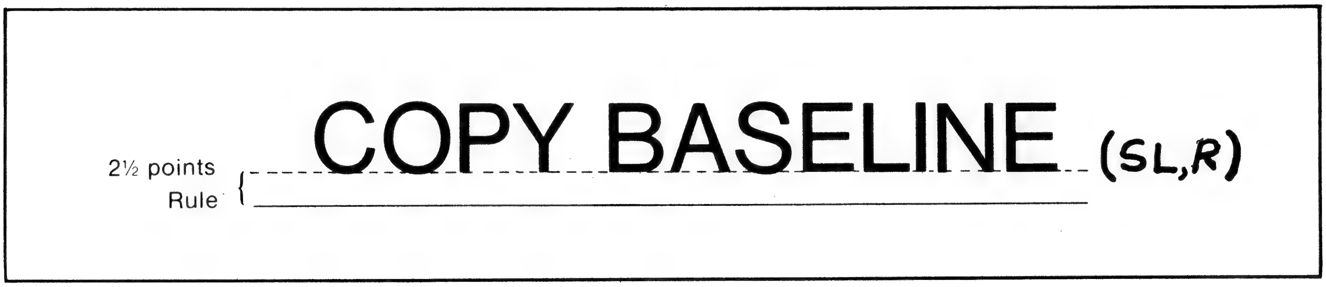
By using a secondary leading value set at approximately 1/3 the value of the point size, a rule can be set slightly below the copy line. This 1/3 value is a *rule of thumb* and will vary depending on the design of the type. In the case of the 12 point type, the secondary leading value would be 1/3 of 12, or 4 points.

Example:



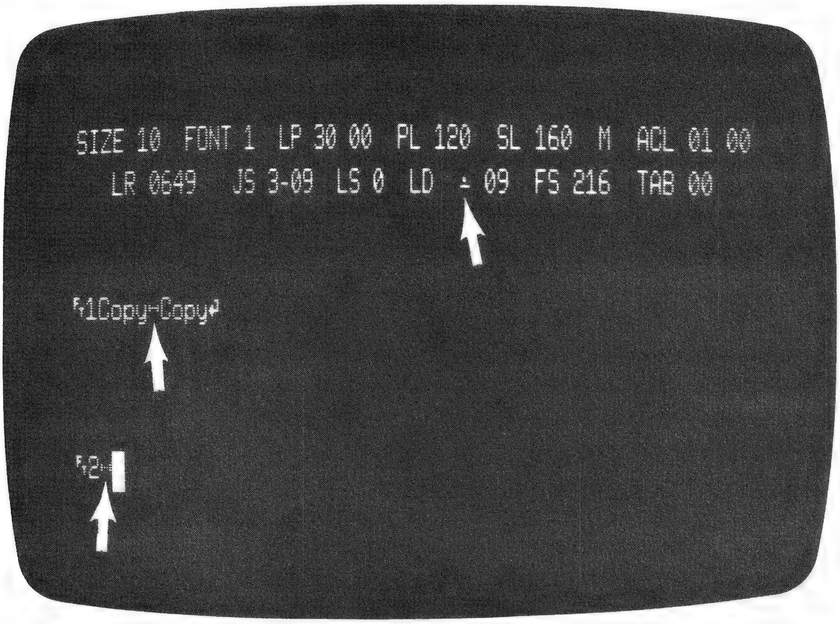
Since approximately 20% of the point size is required for the descenders, the rule is set 2½ points below the baseline for this 12 point type.

Example:



Store Leader Command
Any character on the disc can be stored and used as a leader. The function field indicates the leader character stored and the width of the characters. Unless another character is stored, the function field will indicate the "regular" leader characters as described above.

The function field below indicates the symbol for the regular leader characters.



```
SIZE 10  FONT 1  LP 30 00  PL 120  SL 160  M  ACL 01 00
   LR 0649   JS 3-09  LS 0  LD ∸ 09  FS 216  TAB 00

1Copy-Copy↵

2-█
```

CITY ———————— STATE ————

To store a leader, keyboard:

[©] [USE LDR] + the desired character

Example: If the leader character desired is an asterisk, keyboard:

[©] [USE LDR] [*]

The asterisk will appear in the function field in place of the regular leader symbol and its width automatically. Now whenever the Use Leader key is used, the line will be filled with asterisks.

Note: To store a super shift character, keyboard:

[SUPER SHIFT] [©] [USE LDR] [b] [SUPER SHIFT]

The leader character can be any character available on the type disc or it could be a fixed space.* If you were required to set copy flush left and flush right on the same line, you could, for example, use an En Space as the leader character. In this case, the Use Leader key would be typed between the copy to be set flush left and the copy to be set flush right.

Exercise: Store an En Space as a leader, keyboard:

[©] [USE LDR] [EN SPACE]

The symbol for an En Space will appear in the function field indicating the character has been stored. Now keyboard:

Your name, [USE LDR] the date, [RET]

The phototypesetter will print

Your Name   the date

Note: When a leader character is stored, its font position is not stored. For example, the bullet on a job format is positioned in the super case of the "o" in font 4. If you would store this character as the leader character, the characters in fonts 1, 2, and 3 are also stored and will be accessed if font 1, 2, or 3 is active when the use leader key is pressed. Therefore, to access the bullet as the leader character, you must be in font 4 prior to pressing the use leader key.

---

*Do not use a "j" space.

Leader Width

When a leader character is stored, its width is also stored and displayed in the function field. The standard leader characters each have a width of 9 units. The Leader Width can be changed if desired. Sometimes a job requires that the leader dots be "spread out" for a special effect. To change the leader width, keyboard:

© w # # (representing the desired width)

Reset Data will restore the standard leader characters and width (9 units).

Note: When a character is stored as a leader, the font the machine is in when the store leader command is accessed will determine the leader width.

Keyboarding Tips

Here are a few keyboarding suggestions that may help when using the use leader commands.

1. In order for nine unit leaders or rules to align at the right margin with copy, the line length in units must be divisible by nine. After entering the desired size and approximate line length, divide the number of units displayed (line length remainder in the function field) by nine.* If adjustment is required, enter a slightly different line length, adjusting one or two points at a time or change the leader dot width to a value which can be divided into the line length remainder. (This latter method cannot be used for horizontal rules. They must always be 9 units to connect.) If changing the line length by one or two points is not desirable in order to get a line length remainder divisible by the leader width, enter the line length in units. Adding or subtracting one or two units to make the total divisible by 9 is not as noticeable.

*A fast way to determine if a number is divisible by 9 is add together the total of all the digits in the number. If the total is divisible by 9, the number is also divisible by 9.

Example: Number — 288
2+8+8 = 18 (18 is divisible by 9 and 288 is divisible by 9)

Example: Number — 123
1+2+3 = 6 (6 is not divisible by 9 and neither is 123)
By increasing 123 by 3 it is then divisible by 9. 1+2+6 = 9

2. Lines containing a Use Leader command will always have word space values double the minimum word space value.

3. Use the Store Leader function for copyfitting of a single character. As described earlier, any character can be put into the Stored Leader position in the function field and its width will be shown. To check on the width of a single character, just © USE LDR a press and its width will be shown. Be sure to return the Stored Leader back to its original leader character.

Mortise (Minus ½ unit)

Lesson 21

In typesetting sometimes it is necessary to remove the amount of space between individual characters to improve their "fit".

WAYFARER

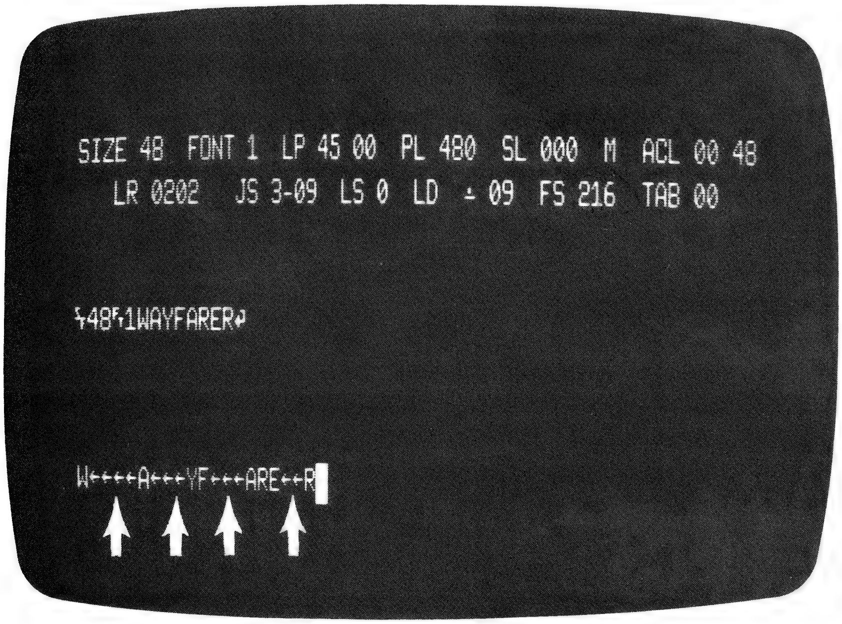
The above example illustrates this situation. The fit of the angled characters, "W" and "A", create such a gap of white space that it breaks up the word and consequently its readability. It is sometimes desirable, especially in the larger point sizes, to remove this white space.

The mortise command $\boxed{-½}$ key offers quick and easy control over the amount of white space between any two characters.

The mortise command acts like a ½ unit back space key. Each time the mortise command is read, it will remove ½ unit of white space before the next character is set. A mortise symbol (arrow left) will be inserted in the copy at that point.

WAYFARER
WAYFARER

For example:



```
SIZE 48  FONT 1  LP 45 00  PL 480  SL 000  M  ACL 00 48
  LR 0202   JS 3-09  LS 0  LD  ± 09  FS 216  TAB 00



ˢ48ᶠ1WAYFARER↵



W←←←←A←←←YF←←←ARE←←R█
  ↑    ↑    ↑    ↑
```

This function gives the operator complete control over the individual character fit needed in some types of work.

White Space Reduction/White Space Addition *Lesson 22*

The ability to completely control the amount of space between characters is very desirable, especially in the larger point sizes. Advertising designers will many times "tighten" a display line to improve readability or simply as a special effect or "eye-catcher".

Automatic White Space Reduction

The Automatic White Space Reduction command allows you to reduce the amount of white space between each character in a line, part of a line, or word automatically. This reduction is in ⅛ unit increments, starting at ⅛ unit up to 9/8 (or 1⅛) unit. To access the command, keyboard:

© r 1 = 1/8 unit reduction
© r 2 = 2/8 or ¼ unit reduction
© r 3 = 3/8 unit reduction
© r 4 = 4/8 or ½ unit reduction
© r 5 = 5/8 unit reduction
© r 6 = 6/8 or ¾ unit reduction
© r 7 = 7/8 unit reduction
© r 8 = 8/8 or 1 unit reduction
© r 9 = 9/8 or 1⅛ unit reduction

When you type the White Space Reduction command, the symbol appears in the function field to the left of the LR. This reminds you that a White Space Reduction command is in effect. The symbol disappears if a size, font, WSA, or © r 0 is entered, canceling the WSR command.

Automatic White Space Addition

The Automatic White Space Addition command allows you to increase the amount of white space between each character in a line, part of a line, or word automatically. This increase is in ⅛ unit increments, starting at ⅛ unit up to 9/8 (or 1⅛) unit. To access the command, keyboard:

© f 1 = 1/8 unit inserted
© f 2 = 2/8 or ¼ unit inserted
© f 3 = 3/8 unit inserted
© f 4 = 4/8 or ½ unit inserted
© f 5 = 5/8 unit inserted
© f 6 = 6/8 or ¾ unit inserted
© f 7 = 7/8 unit inserted
© f 8 = 8/8 or 1 unit inserted
© f 9 = 9/8 or 1⅛ unit inserted

When you type the White Space Addition command, the symbol appears in the function field to the left of the LR. This reminds you that a White Space Addition command is in effect. The symbol disappears if a size, font, WSR, or © f 0 is entered, canceling the WSA command.

Note: For a better typographical appearance with some styles, the minimum word space could be enlarged to a value of "4" when using white space addition.

The following examples illustrate the use of white space reduction and white space addition in copy.

normal	White Space Reduction	**normal**	White Space Addition
© r 1	White Space Reduction	© f 1	White Space Addition
© r 2	White Space Reduction	© f 2	White Space Addition
© r 3	White Space Reduction	© f 3	White Space Addition
© r 4	White Space Reduction	© f 4	White Space Addition
© r 5	White Space Reduction	© f 5	White Space Addition
© r 6	White Space Reduction	© f 6	White Space Addition
© r 7	White Space Reduction	© f 7	White Space Addition
© r 8	White Space Reduction	© f 8	White Space Addition
© r 9	White Space Reduction	© f 9	White Space Addition

Important: The following describes some of the rules for using the WSR (White Space Reduction) and WSA (White Space Addition) commands.

The commands must be entered *after* the size and/or font command and will affect the copy which follows. Any size or font command will cancel the WSR and WSA commands immediately. The WSR and WSA commands can also be cancelled by pressing Reset Data or entering a WSR or WSA command of zero.

~~The Comp/Set Phototypesetter *must* be operated in the manual mode when using the WSR or WSA commands.~~

Fixed spaces and word spaces are not affected by the WSR or WSA commands.

If using WSR or WSA, the letterspacing value in the function field must be set to zero.

Corrections *cannot* be made on a line containing a WSR or WSA command. If corrections are required, erase the line and re-keyboard the copy. One way to avoid this situation is to enter a Return after the WSR or WSA command. This will allow corrections to be made on all lines as usual. (If the leading caused by these additional returns is not desired, change the stored leading to zero before pressing the Return key.)

More than one WSR command can be entered in a line and more than one WSA command can be entered in a line, but do *not* enter a WSR and WSA in the same line.

The Mortise command and WSR or WSA command can be used together to help control the spacing between characters.

OUTLINE COPY

1. Store fixed space - ⓒ fixed space 100
2. Calculate indent left =
   Indent must be large enought to have room for all copy to left of indent, i.e.

   A = 13 units
   . = 5 units
   EM = 18 units
   36 units

   UNIT COUNT FOR CHARACTERS COMES FROM TYPE LOCATION CHART

   Convert units to picas (chart in Operator Aids Section). With 9 pt type, 36 units = 1½ picas
3. Keyboard indent - ⓒ flush left 0106
4. Reverse carriage - ⓒ -½ unit - type A.em, stop reverse carriage- ⓒ -½ unit. Type remaining copy to end of paragraph.
5. For line with B., repeat step 4.
6. When line with 1. comes up you must increase indent-

   1 = 10 units
   . = 5 units
   EN = 9 units
   24 units = 1 pica

   Indent increases by 1[illegible] picas
7. Repeat from step 3 above - ⓒ flush left 0206, step 4, 5, etc.
8 At end of job cancel indents - ⓒ center 0000, flush left, ret.

A.
B.
M -

EXAMPLE

A. There are many type styles or families of type available for the Comp/Set phototypesetter.
   1. Each type face can be set in a full range of sizes from 5½ to 74 point.
   2. Different weights of type for each family are generally provided on a disc plus a different face in Bold in Font 4.

B. Each font on a type disc also contains special characters called pi characters.
   1. To afford greater flexibility for different typesetting applications, pi characters may vary from disc to disc according to the disc format.
      (1) The different disc formats are News, Job, ad, catalog and book.
      (2) Each disc is supplied with a disc format chart.
   2. Also available are foreign language type faces.

0107
0209
13
0401

11
5
18
34
24
58
29
8 224

10
5
9
24

10
10
9
29

Reverse Carriage

Lesson 23

The Reverse Carriage command allows the operator to back up the carriage and insert a character or word(s) outside the margin (as long as the copy being inserted is within the 45 pica maximum line length). The Reverse Carriage Command is accessed by keyboarding:

© -½ Em C -½

4

The following sample is an excellent application for the Reverse Carriage function:

A. Em There are many type styles or families of type available for the Comp/Set Phototypesetter.

B. Em Each type face can be set in a full range of sizes from 5½ to 74 point.

C. Em Different weights of type for each family are generally provided on a disc plus a different face in Bold in Font 4.

D. Em Each font on a type disc also contains special characters called pi characters.

3
5
18
37 units

Pica 02 Points 00

The "A, B, C, and D" in the above example can be set outside the left margin in the following manner:*

1. Determine the width of the widest character (A, B, C, or D), the period, and the Em space. The Catalog of Phototypesetting Typefaces or the Character Width/Keyboard Location Chart can be used to determine the character width and period.
   Example: Megaron Medium the widest character is 14 units and the period = 5 units.
   14 + 5 + 18 (Em Space) = 37
2. Store a Fixed Space value in excess of copy to be used within the Reverse Carriage Sequence.
   Example: In the above example, the fixed space would have to be greater than 37 units, at least 38 units.

3. Press the Fixed Space key. (This will cause the phototypesetter's carriage to advance from the ¼" margin an amount equal to the fixed space value—making room for the Reverse Carriage copy.)

3. INTER INDENT LEFT COMMAND IN PICAS & POINTS

4. Enter the Reverse Carriage command © -½
5. Keyboard the copy, i.e., "A . Em "
6. Enter a second Reverse Carriage command — © -½ — ending the Reverse Carriage sequence.
7. ~~Type the paragraphs as normal. Remember, each end of line will return the typesetter to its ¼" margin, so it will be necessary to indent each line with the "Stored Fixed Space".~~

If the copy keyboarded while in the Reverse Carriage sequence equals or exceeds the value of the Stored Fixed Space, a closing Reverse Carriage command will automatically be entered. A Reverse Carriage symbol (2 arrows pointing left) will appear on the screen in front of the character that equaled or exceeded the Stored Fixed Space value.

9

The Automatic Indent command and the Reverse Carriage command can be used together *if* the value of the indent is also stored in the fixed space location in the function field. (The fixed space key does not have to be used, but the value must be stored.) It is important to remember that the Reverse Carriage and Stored Fixed Space must be used together, as the Reverse Carriage function is affected by the Stored Fixed Space value.

*If using the Reverse Carriage command while justifying copy, the letterspacing value in the function field must be set to zero.

While you were keyboarding in the Reverse Carriage sequence, notice that the phototypesetter was displaying digits on the typing line. These digits were the machines calculations as it added together the character width of the copy you were keyboarding. This can be a very fast and easy way of measuring the length of copy.

In the example below, the reverse carriage command can be used to set the copy. To do this, determine the width of the longest line, "Characters in Font." Store a fixed space value that you think is large enough for "Characters in Font" to fit. (Control fixed space, and three digits).

Press the fixed space key followed by the reverse carriage command. Type "Characters in Font" and an en space for the gutter between columns. Use fixed spaces to obtain word spaces (Don't use the normal j-space while in the reverse carriage sequence).

As you keyboard, the machine automatically adds the width of all the characters in the reverse carriage sequence. When you finish typing "Characters in Font" add at least one unit to this measurement and store this value as your fixed space for your reverse carriage sequence.

For example:

Size Selection	Keyboard command
Size Mixing	Unlimited mixing within entire size range
Line Length	Maximum 45 picas in all sizes
Type Fonts	Four fonts on line
Characters in Font	112 characters per font
Font Selection	Keyboard command
Font Mixing	Unlimited

Note: Do not attempt to erase or correct copy anywhere within a line containing a Reverse Carriage sequence. If an error occurs, clear the entire line and begin again.

You have now calculated the width of the longest line. Cancel the line and begin job.

Tabular Copy

Lesson 24

Tabular work can be done in manual mode only. As many tab columns as desired may be keyboarded in one line as long as they do not exceed the maximum 45 pica line length.

When tabs are set on the typesetter, each tab column has a specific starting and ending point, which are the left and right margins. These are determined by the line length of each column. Tab #2 begins where tab #1 ends, tab #3 begins where tab #2 ends.

Example:

Tab 1	Tab 2	Tab 3	Tab 4	Tab 5
Winter Coats	*9 only*	**$100.00**		**Blue & Red**
Fashion Boots	*8 only*	**29.00**		**Brown & Black**
Windbreakers	*6 only*	**11.99**		**All nylon**
9½ picas	3½ picas	4 picas	1 pica	5 picas

In the above example, the first tab column which always begins at the left margin of the overall line length, is 9½ picas wide. Any copy entered in Tab 1 cannot exceed 9½ picas. Tab 2 begins where Tab 1 ends, and is 3½ picas wide. Copy entered in Tab 2 cannot exceed 3½ picas; and so on. Since tab 3 is flush right and tab 5 is flush left, tab 4 was set-up to separate them. This also could be accomplished by combining tab 4 and 5 and then inserting white space with the Fixed Space key before typing in the last tab column.

The point to remember is that each tab column is like a block of wood. It takes up a specific amount of space and the next tab column must begin at the point where the last column ends.

It is important to get used to determining how the copy will position in the tab columns. In the following example, there are 4 definite tab columns. The first and second columns must flush left. The third column can actually position flush left, right or center since each line contains the same character count. It is probably best to flush right the fourth column so that the overall tabular job fills the overall line length desired.

Exercise

President	J. R. Smith	889-7002	ext. 240
Sales Manager	B. Thompson	889-7302	ext. 277
Asst. Sales Manager	K. DeWitt	889-8204	ext. 301
Personnel Director	E. O'Keefe	889-9841	ext. 205
Product Inspector	M. Kary	889-5021	ext. 222
Marketing Specialist	A. S. Jenkins	889-6402	ext. 345

Determine the line length of each tab column by typing the longest line with an estimated line length and size. If this line oversets, enlarge the line length or reduce the copy. Write out the necessary information for each tab column on a "Layout Sheet" and refer to it when setting the tab job.

If the copy in the tab column is to be justified, the operator will simply follow normal justification procedures using the LL of the tab column.

Keyboarding Tabular Copy

1. Enter a Manual Mode.
2. Enter size, font, line length, primary leading and secondary leading for 1st tab column.
3. Type copy.
4. Enter tab code and size, font, line length etc., for the second column if that information varies from the first tab column.

Note: As with a typewriter, the left margin is always the beginning of the first column. It is not necessary to keyboard a "tab" in the first tab column.

General Notes:

1. Separate all tab columns with a tab code. Tab is an end-of-line on the screen only.
2. The sum of all tab column line lengths across must not exceed 45 picas.
3. Enter correct line length for each tab column before typing copy, unless all tabs are identical.
4. Indicate a flush right, left or center before going to next tab column.
5. Enter a return only after the last tab column in the line.

Review Exercise

Set the above tabular copy with an overall line length of 24 picas. Determine the appropriate point size and keyboard the job.

Add Lead

Lesson 25

A third leading command available is Add Lead. When the Add Lead Command is entered, the paper advances the primary leading value immediately. Unlike the other leading commands, when Add Lead is activated, the carriage in the typesetter does not return to the left margin. A "Sec Lead" key typed just before the "Add Lead" will cause the paper to advance the value stored as Secondary Leading in the function field.

The command for Add Lead is $\boxed{\text{©}}\boxed{\text{V}}$. The commands for Add Lead using secondary Lead is: $\boxed{\text{SEC LD}}\boxed{\text{©}}\boxed{\text{V}}$.

Exercise

ADD LEAD EXERCISE

There are, then, two typographies, as there are two worlds: (FL,R)
and, (AL)
apart (AL)
from (AL)
God (AL)
or (AL)
profits, (AL)
the test of one is mechanical perfection, (FL,R)
and of the other, sanctity—the commercial article at its best (FL,R)

Re-Read Character Widths/Insert Character Width *Lesson 26*

Character widths are stored on each type disc and read by the machine while keyboarding. If the machine cannot read a width it will display the disc location number of the character in question in the lower right portion of the function field, and the keyboard will lock. The machine may be unable to read the width of a character due to dust or fingerprints on the disc. Remove the disc from the machine and clean it according to the instructions included with each type disc. If the disc is scratched, and thus causing the widths to be misread, it is necessary to replace the disc.

The "Character Width/Disc Location Chart" included with each Type disc, enables the operator to locate the character and its width when a disc location number appears in the function field. The operator can then use the damaged type disc until it can be replaced.

How to Use This Chart:
If a disc location number appears in the function field after pressing Reset Data or © y (Store New Disc Widths Command), follow these steps:

1. Depress © g (Re-Read Character Width Command). This causes the phototypesetter to attempt to re-read the character width it is missing. If the disc location number reappears in the function field after depressing © g, the machine was still unable to read the character width, and the following steps may be followed.
2. Examine the disc location number in the function field to determine which position on the disc is misreading. The number will always be 4 digits, the first digit indicates the font, the last 3 digits indicate the character location on the disc.

Example:
If the disc location number is 2019, the character is in Font 2, position 19.

3. Locate the character position on the Character Width/Disc Location Chart, to determine the width of the character. In the example given, position 19, font 2 would be located and the corresponding width used.
4. Press © i (Insert Character Width Command) followed by three digits equal to the width of the character as determined in "3" above. This "tells" the phototypesetter the width it could not read. The first two digits represent the whole unit width value of the character. The third digit represents a half unit value. If the value is a whole unit, the third digit must be zero. Any other number from 1-9 is recognized as a half.

When RESET DATA or © y are pressed, the machine reads and stores in its memory the widths of all the characters on the disc.

Line Length Index

Lesson 27

The Comp/Set phototypesetter can set copy on type "S" paper (fast stabilization), RC paper (resin-coated), or film. Characters are photographed onto the dry paper or film which is then processed through the appropriate chemicals and allowed to dry again. Type "S" paper has a tendency to expand or stretch when wet. Film and RC paper, however, are stable and do not stretch during processing.

Therefore, to maintain accurate line lengths, the "Line Length Index" command can be used to automatically compensate for the photographic media being used.

© p o sets the line lengths for RC paper and film. A lower case "f" appears next to the LP. © p 1 reduces the line lengths slightly to compensate for Type "S" paper stretch. Each time the Line Length Index is changed, the line length sequence must be re-entered.

Note: The Comp/Set is programmed for Type "S" paper. It is not necessary to enter this command unless it has been changed. RESET DATA *will return the line length index to Type "S" paper.* If RC paper or film is to be used, enter the command to change the Line Length Index to film *before* keyboarding the actual line length command.

Automatic Ragged Copy *Lesson 28*

Some jobs require ragged left, right or centered copy. The Automatic Ragged Command is accessed by typing two flush commands (left, right or center) at the beginning of a job, causing every succeeding line to set accordingly. A flush symbol (left, right or center) appears next to the mode when you enter the Automatic Ragged Command.

This command can be used in automatic as well as manual mode. For a better typographic look with some styles, set the minimum word space at "2".

Note the following samples:

Ragged Right: [FLUSH LEFT] [FLUSH LEFT]

Auto Ragged Copy
Some jobs require ragged left, right or FL rt
both copy. The automatic ragged com- FL R
mand which is accessed by typing 2 flush
commands *(left, right or center)* at the
beginning of a job, will cause each suc-
ceeding line to be set accordingly. [FLUSH LEFT] [RET]

Ragged Left: [FLUSH RIGHT] [FLUSH RIGHT]

Auto Ragged Copy
Some jobs require ragged left, right or
both copy. The automatic ragged com-
mand which is accessed by typing 2 flush
commands *(left, right or center)* at the
beginning of a job, will cause each suc-
ceeding line to be set accordingly. [FLUSH RIGHT] [RET]

and Centered automatically: [CENT] [CENT]

Auto Ragged Copy
Some jobs require ragged left, right or
both copy. The automatic ragged com-
mand which is accessed by typing 2 flush
commands *(left, right or center)* at the
beginning of a job, will cause each suc-
ceeding line to be set accordingly. [CENT] [RET]

Any other left, right or center key typed after the ragged command is entered causes succeeding lines to justify by breaking the ragged lock condition and the flush symbol disappears from the function field. To unlock the ragged condition, always enter the single flush command before the last carriage return.

Line Length in Units and Ciceros

Lesson 29

Working in a line length in units allows the operator to enter "exact" line lengths for close fitting tabular work or leadered copy. The line length can also be entered in ciceros/points for International use. The function field indicates an LP (Line Length in Picas) LU (Line Length in Units) or an LC (Line Length Ciceros for International Use). Follow this chart for the correct keyboarding procedure:

FUNCTION	COMMAND	FUNCTION FIELD
Line Length Picas/Points	© d 0	LP*
Line Length Ciceros/Points	© d 1	LC
Line Length Units	© d 2	LU

Once the mode of line length has been established (LP, LC or LU), reenter the line length command and 4 digits representing the correct value. When entering the line length in units be certain the size command precedes the line length command.

---

*Line Length picas is standard value after turning the machine on or reset.

Comp/Set Phototypesetter Troubleshooting *Lesson 30*

Listed below are some of the problems you *may* encounter.

1. Paper Out:

The Comp/Set phototypesetter will sound a prolonged beep and will only allow you to set a few characters before locking the keyboard. To avoid running out of paper in the middle of a job, check the "Footage Indicator" each morning. It will tell you how many feet/tenths of foot have been used. A box of paper holds 150 feet. When inserting a new box of paper, reset the indicator by pressing the recessed button next to the footage counter with a pencil.

2. Lines not properly justified:

If using the reverse carriage function, check these points:

a. Make any size or font changes before entering the "Reverse Carriage" function.

b. Corrections except for last word delete *cannot* be made anywhere on the line in which a reverse carriage is used. If an error occurs, cancel the entire line and retype it correctly.

c. Do not use a justifying space *within* the reverse carriage sequence. If two or more words are typed, use a fixed space between them.

A [©][z][6] will produce a fixed space equal to 6 units, a desirable word space.

Do not leave a line which has not been set (bottom typing line) on the screen when ending a job. (There is a tendency to do this when using the "Repeat Line".) Clear last line, then lead-up with [©][e] .

3. Over Temperature Condition

If the internal temperature exceeds the limit for reliable machine operation, a prolonged beep sounds until the temperature is reduced. If this happens:

a. End the job as soon as possible. Once the beep sounds, you should end the job within a minute.

b. Turn the power off.

c. Contact your AM service representative.

4. Unwanted Characters or Commands occurring:

Electrical disturbances will cause the Comp/Set computer to cause errors. Two remedies are:

a. Do not set machine on CARPETING.

b. Have local power company check power outlet for 48 hours with a recording voltmeter. Take necessary action to correct problem voltages.

5. Light-leaks on paper:

a. Paper supply panel not closed completely.

b. Receiving cassette not clipped tightly to back metal plate.

6. Cursor won't move during/after commands:

All commands requiring digits must be keyboarded completely. (e.g. command and correct number of digits.)

7. Commands in Tab/Data Storage missing:

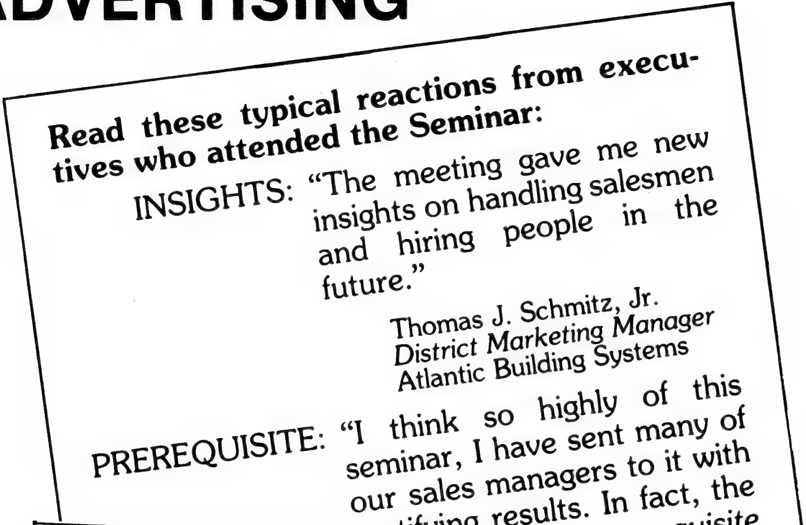
Only lower case commands/digits can be used in Tab/Data storage.

applications/samples

Comp/Set®
phototypesetting
systems

application

ADVERTISING

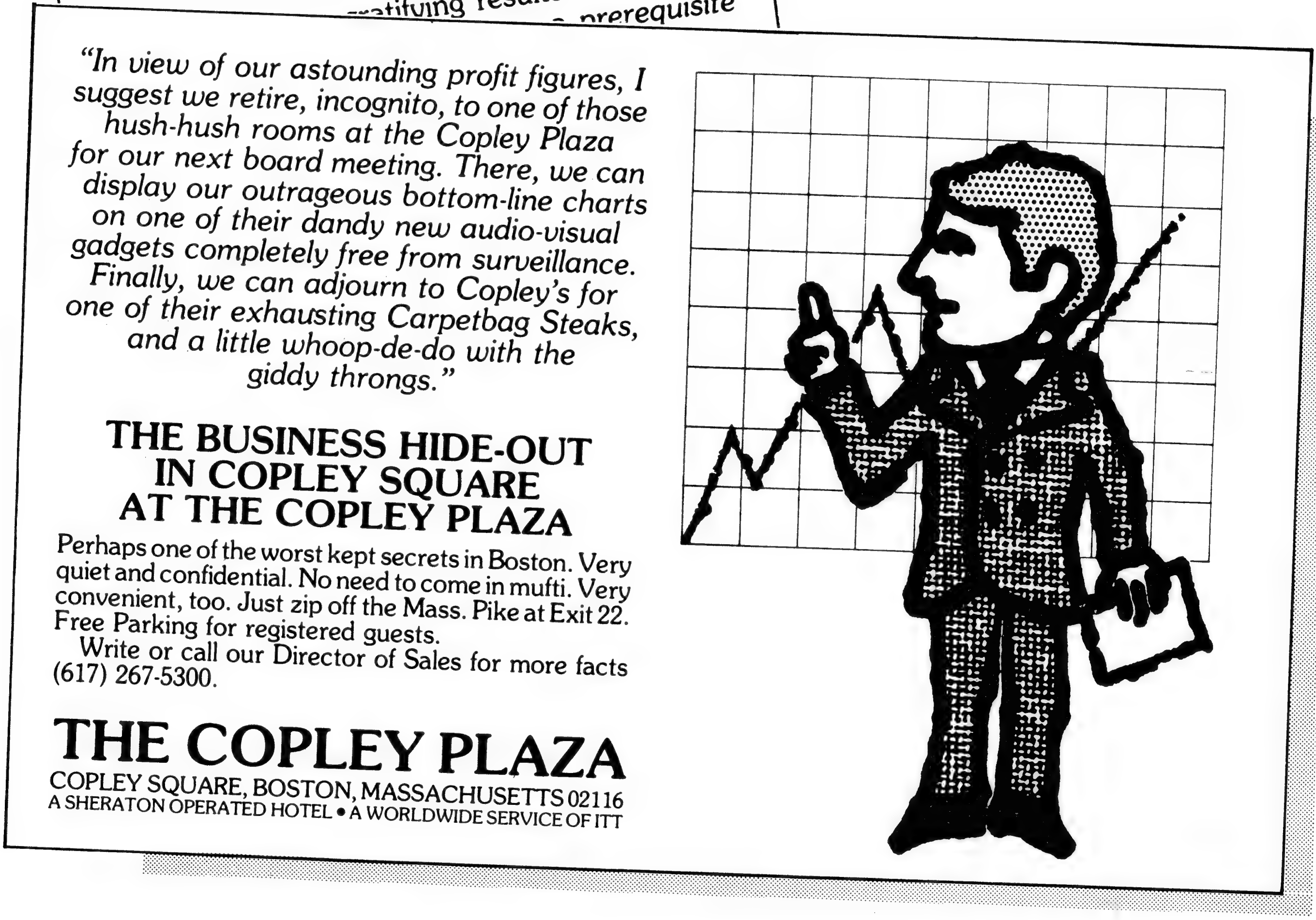


Read these typical reactions from executives who attended the Seminar:

INSIGHTS: "The meeting gave me new insights on handling salesmen and hiring people in the future."

Thomas J. Schmitz, Jr.
District Marketing Manager
Atlantic Building Systems

PREREQUISITE: "I think so highly of this seminar, I have sent many of our sales managers to it with atifying results. In fact, the prerequisite



"In view of our astounding profit figures, I suggest we retire, incognito, to one of those hush-hush rooms at the Copley Plaza for our next board meeting. There, we can display our outrageous bottom-line charts on one of their dandy new audio-visual gadgets completely free from surveillance. Finally, we can adjourn to Copley's for one of their exhausting Carpetbag Steaks, and a little whoop-de-do with the giddy throngs."

THE BUSINESS HIDE-OUT IN COPLEY SQUARE AT THE COPLEY PLAZA

Perhaps one of the worst kept secrets in Boston. Very quiet and confidential. No need to come in mufti. Very convenient, too. Just zip off the Mass. Pike at Exit 22. Free Parking for registered guests.

Write or call our Director of Sales for more facts (617) 267-5300.

THE COPLEY PLAZA

COPLEY SQUARE, BOSTON, MASSACHUSETTS 02116
A SHERATON OPERATED HOTEL • A WORLDWIDE SERVICE OF ITT

$S_F16\ L_L1006\ P_L230\ S_L000\ F_T3$ **COMP/SET 500**

$S_F23\ P_L310\ F_T2$ ©r2 *VARITYPER*

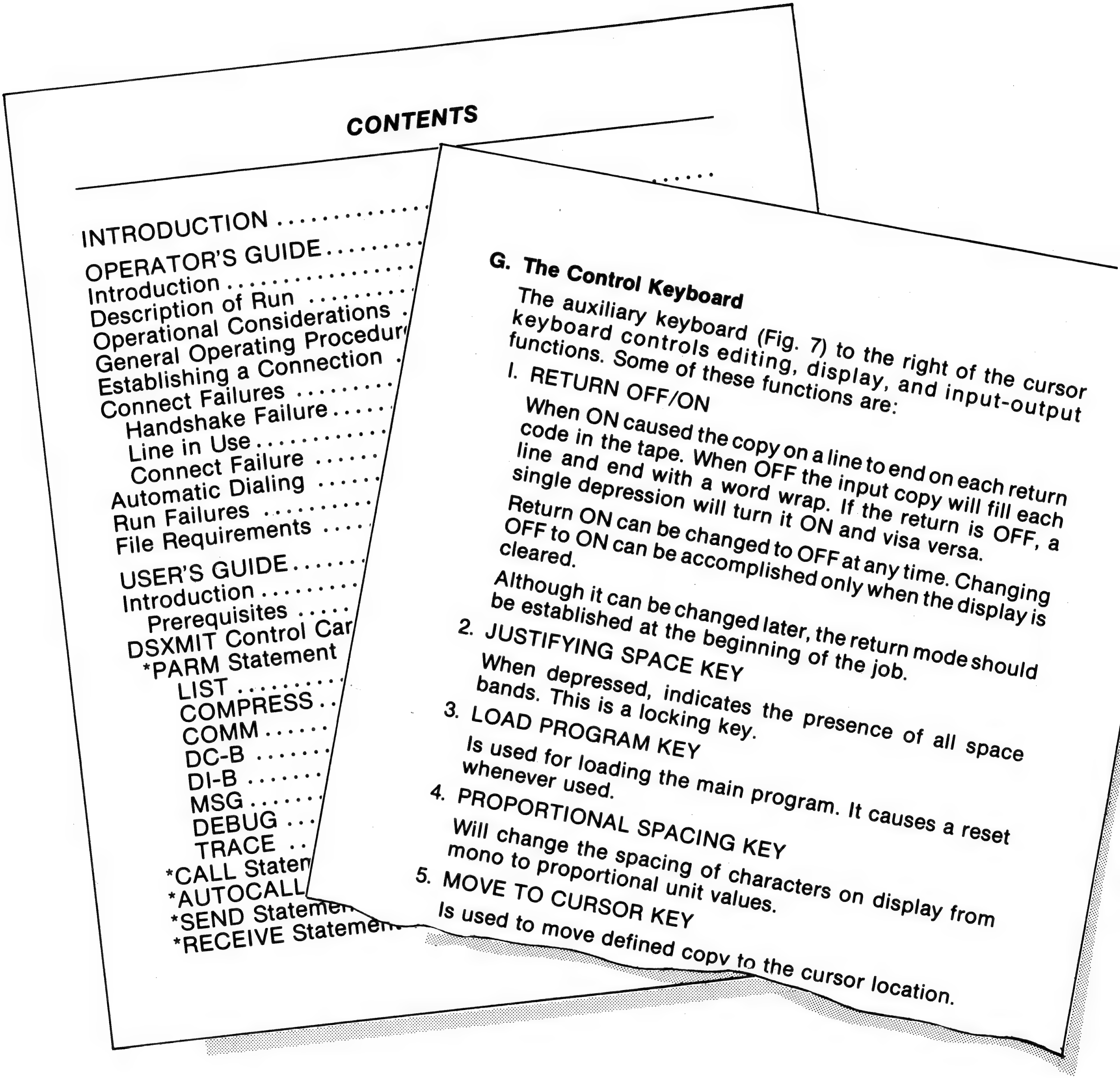
$S_F33\ P_L3200\ F_T1$ DIRECT

$S_F36\ P_L130$ ENTRY

$S_F11\ F_T3$ F5003 **PHOTOTYPESETTER**

COMP/SET 500
VARITYPER
DIRECT
ENTRY
PHOTOTYPESETTER

applications
MANUALS



CONTENTS

INTRODUCTION ....
OPERATOR'S GUIDE ....
Introduction ....
Description of Run ....
Operational Considerations .
General Operating Procedur
Establishing a Connection .
Connect Failures ....
Handshake Failure .....
Line in Use ....
Connect Failure .....
Automatic Dialing .....
Run Failures ....
File Requirements ....
USER'S GUIDE ....
Introduction ....
Prerequisites .....
DSXMIT Control Car
*PARM Statement
LIST ....
COMPRESS ..
COMM ......
DC-B ....
DI-B ....
MSG ....
DEBUG ...
TRACE ..
*CALL Staten
*AUTOCALL
*SEND Statemen
*RECEIVE Statemen

G. The Control Keyboard

The auxiliary keyboard (Fig. 7) to the right of the cursor keyboard controls editing, display, and input-output functions. Some of these functions are:

1. RETURN OFF/ON

When ON caused the copy on a line to end on each return code in the tape. When OFF the input copy will fill each line and end with a word wrap. If the return is OFF, a single depression will turn it ON and visa versa.

Return ON can be changed to OFF at any time. Changing OFF to ON can be accomplished only when the display is cleared.

Although it can be changed later, the return mode should be established at the beginning of the job.

2. JUSTIFYING SPACE KEY

When depressed, indicates the presence of all space bands. This is a locking key.

3. LOAD PROGRAM KEY

Is used for loading the main program. It causes a reset whenever used.

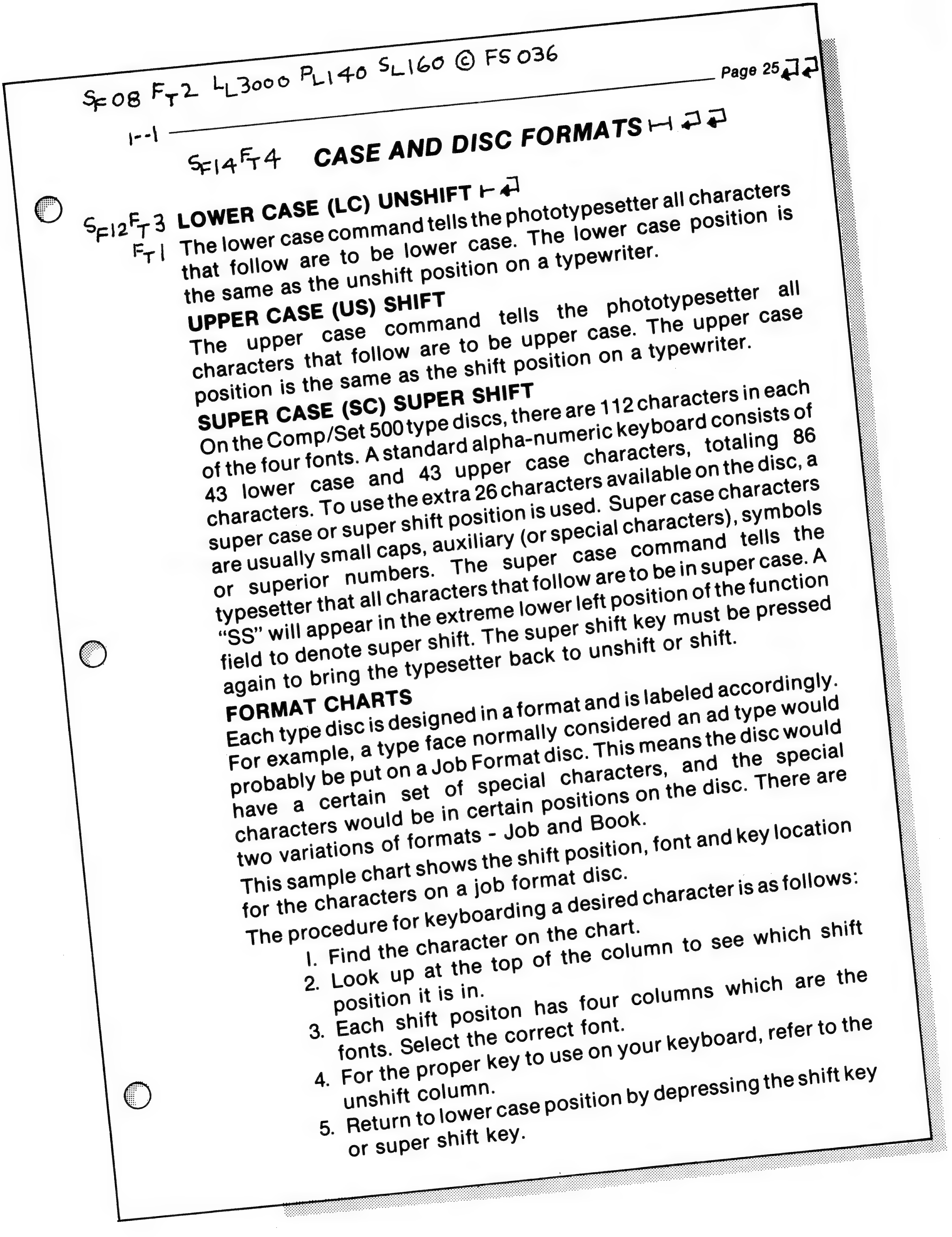
4. PROPORTIONAL SPACING KEY

Will change the spacing of characters on display from mono to proportional unit values.

5. MOVE TO CURSOR KEY

Is used to move defined copy to the cursor location.

ADDRESSOGRAPH MULTIGRAPH
VARITYPER DIVISION



SF08 FT2 LL3000 PL140 SL160 © FS036

Page 25 ↵↵

1--1

SF14FT4 **CASE AND DISC FORMATS** ⊢⊣ ↵↵

SF12FT3 **LOWER CASE (LC) UNSHIFT** ⊢ ↵

FT1 The lower case command tells the phototypesetter all characters that follow are to be lower case. The lower case position is the same as the unshift position on a typewriter.

UPPER CASE (US) SHIFT

The upper case command tells the phototypesetter all characters that follow are to be upper case. The upper case position is the same as the shift position on a typewriter.

SUPER CASE (SC) SUPER SHIFT

On the Comp/Set 500 type discs, there are 112 characters in each of the four fonts. A standard alpha-numeric keyboard consists of 43 lower case and 43 upper case characters, totaling 86 characters. To use the extra 26 characters available on the disc, a super case or super shift position is used. Super case characters are usually small caps, auxiliary (or special characters), symbols or superior numbers. The super case command tells the typesetter that all characters that follow are to be in super case. A "SS" will appear in the extreme lower left position of the function field to denote super shift. The super shift key must be pressed again to bring the typesetter back to unshift or shift.

FORMAT CHARTS

Each type disc is designed in a format and is labeled accordingly. For example, a type face normally considered an ad type would probably be put on a Job Format disc. This means the disc would have a certain set of special characters, and the special characters would be in certain positions on the disc. There are two variations of formats - Job and Book.

This sample chart shows the shift position, font and key location for the characters on a job format disc.

The procedure for keyboarding a desired character is as follows:

1. Find the character on the chart.
2. Look up at the top of the column to see which shift position it is in.
3. Each shift positon has four columns which are the fonts. Select the correct font.
4. For the proper key to use on your keyboard, refer to the unshift column.
5. Return to lower case position by depressing the shift key or super shift key.

CASE AND DISC FORMATS

LOWER CASE (LC) UNSHIFT

The lower case command tells the phototypesetter all characters that follow are to be lower case. The lower case position is the same as the unshift position on a typewriter.

UPPER CASE (US) SHIFT

The upper case command tells the phototypesetter all characters that follow are to be upper case. The upper case position is the same as the shift position on a typewriter.

SUPER CASE (SC) SUPER SHIFT

On the Comp/Set 500 type discs, there are 112 characters in each of the four fonts. A standard alpha-numeric keyboard consists of 43 lower case and 43 upper case characters, totaling 86 characters. To use the extra 26 characters available on the disc, a super case or super shift position is used. Super case characters are usually small caps, auxiliary (or special characters), symbols or superior numbers. The super case command tells the typesetter that all characters that follow are to be in super case. A "SS" will appear in the extreme lower left position of the function field to denote super shift. The super shift key must be pressed again to bring the typesetter back to unshift or shift.

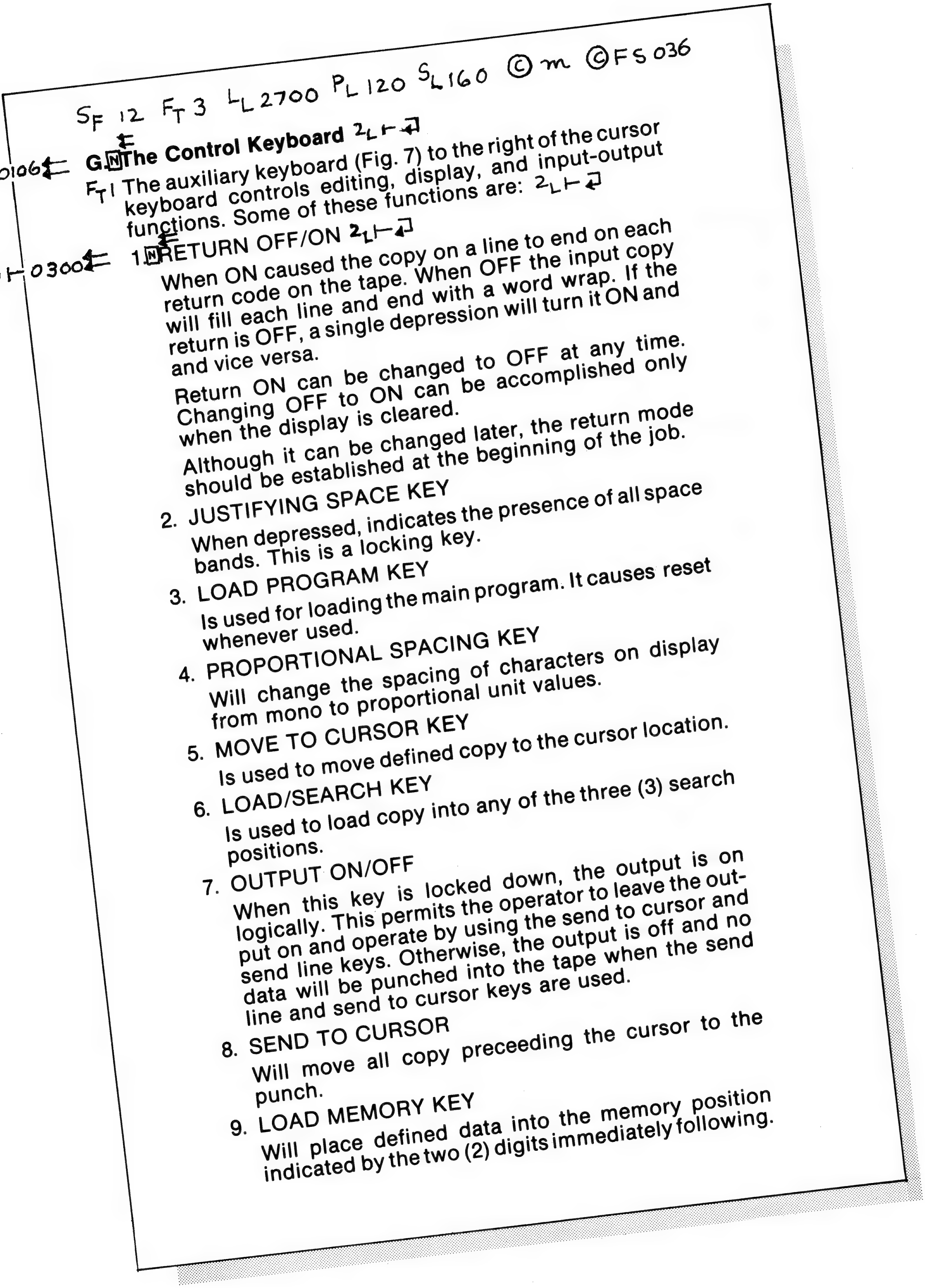
FORMAT CHARTS

Each type disc is designed in a format and is labeled accordingly. For example, a type face normally considered an ad type would probably be put on a Job Format disc. This means the disc would have a certain set of special characters, and the special characters would be in certain positions on the disc. There are two variations of formats - Job and Book.

This sample chart shows the shift position, font and key location for the characters on a job format disc.

The procedure for keyboarding a desired character is as follows:

1. Find the character on the chart.
2. Look up at the top of the column to see which shift position it is in.
3. Each shift positon has four columns which are the fonts. Select the correct font.
4. For the proper key to use on your keyboard, refer to the unshift column.
5. Return to lower case position by depressing the shift key or super shift key.



S_F 12 F_T 3 L_L 2700 P_L 120 S_L 160 © m ©FS 036

©⊢0106↵ **G.$\boxed{N}$The Control Keyboard** 2_L⊢↵

F_T1 The auxiliary keyboard (Fig. 7) to the right of the cursor keyboard controls editing, display, and input-output functions. Some of these functions are: 2_L⊢↵

©⊢0300↵ 1.$\boxed{N}$RETURN OFF/ON 2_L⊢↵

When ON caused the copy on a line to end on each return code on the tape. When OFF the input copy will fill each line and end with a word wrap. If the return is OFF, a single depression will turn it ON and and vice versa.

Return ON can be changed to OFF at any time. Changing OFF to ON can be accomplished only when the display is cleared.

Although it can be changed later, the return mode should be established at the beginning of the job.

2. JUSTIFYING SPACE KEY

When depressed, indicates the presence of all space bands. This is a locking key.

3. LOAD PROGRAM KEY

Is used for loading the main program. It causes reset whenever used.

4. PROPORTIONAL SPACING KEY

Will change the spacing of characters on display from mono to proportional unit values.

5. MOVE TO CURSOR KEY

Is used to move defined copy to the cursor location.

6. LOAD/SEARCH KEY

Is used to load copy into any of the three (3) search positions.

7. OUTPUT ON/OFF

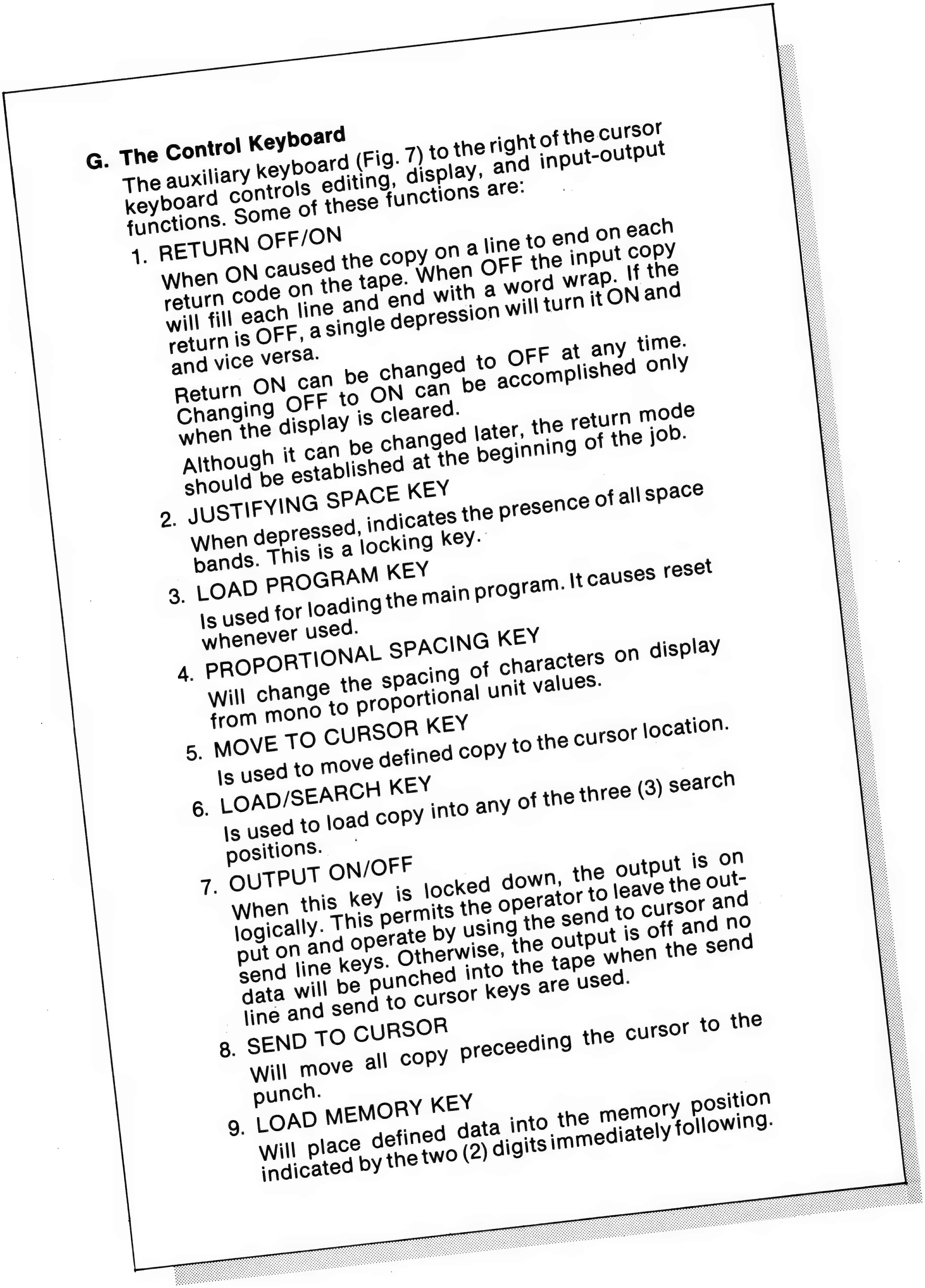
When this key is locked down, the output is on logically. This permits the operator to leave the output on and operate by using the send to cursor and send line keys. Otherwise, the output is off and no data will be punched into the tape when the send line and send to cursor keys are used.

8. SEND TO CURSOR

Will move all copy preceeding the cursor to the punch.

9. LOAD MEMORY KEY

Will place defined data into the memory position indicated by the two (2) digits immediately following.



G. The Control Keyboard

The auxiliary keyboard (Fig. 7) to the right of the cursor keyboard controls editing, display, and input-output functions. Some of these functions are:

1. RETURN OFF/ON

   When ON caused the copy on a line to end on each return code on the tape. When OFF the input copy will fill each line and end with a word wrap. If the return is OFF, a single depression will turn it ON and and vice versa.

   Return ON can be changed to OFF at any time. Changing OFF to ON can be accomplished only when the display is cleared.

   Although it can be changed later, the return mode should be established at the beginning of the job.

2. JUSTIFYING SPACE KEY

   When depressed, indicates the presence of all space bands. This is a locking key.

3. LOAD PROGRAM KEY

   Is used for loading the main program. It causes reset whenever used.

4. PROPORTIONAL SPACING KEY

   Will change the spacing of characters on display from mono to proportional unit values.

5. MOVE TO CURSOR KEY

   Is used to move defined copy to the cursor location.

6. LOAD/SEARCH KEY

   Is used to load copy into any of the three (3) search positions.

7. OUTPUT ON/OFF

   When this key is locked down, the output is on logically. This permits the operator to leave the output on and operate by using the send to cursor and send line keys. Otherwise, the output is off and no data will be punched into the tape when the send line and send to cursor keys are used.

8. SEND TO CURSOR

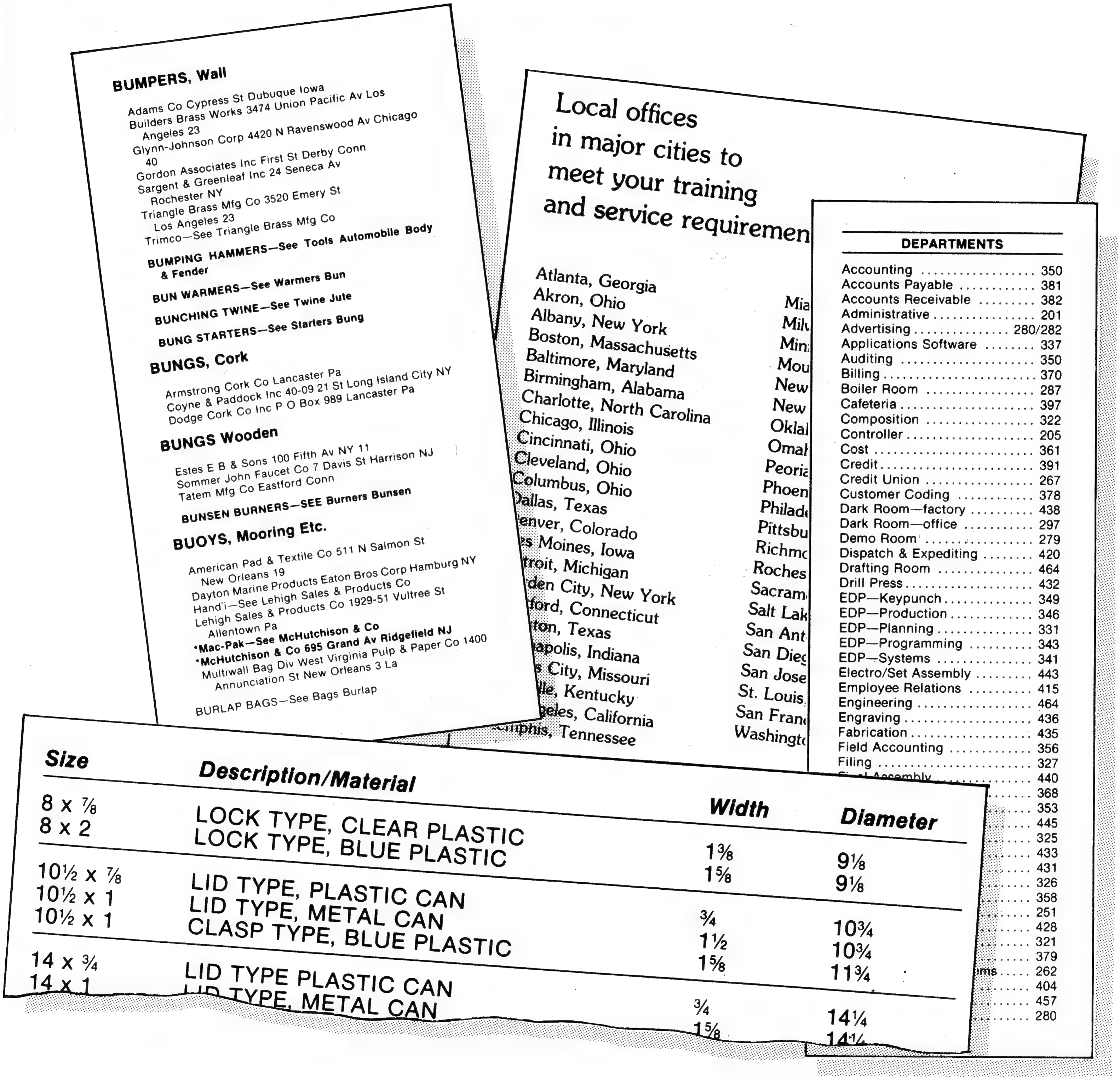
   Will move all copy preceeding the cursor to the punch.

9. LOAD MEMORY KEY

   Will place defined data into the memory position indicated by the two (2) digits immediately following.

applications

LISTING or DIRECTORIES



BUMPERS, Wall

Adams Co Cypress St Dubuque Iowa
Builders Brass Works 3474 Union Pacific Av Los
Angeles 23
Glynn-Johnson Corp 4420 N Ravenswood Av Chicago
40
Gordon Associates Inc First St Derby Conn
Sargent & Greenleaf Inc 24 Seneca Av
Rochester NY
Triangle Brass Mfg Co 3520 Emery St
Los Angeles 23
Trimco—See Triangle Brass Mfg Co

BUMPING HAMMERS—See Tools Automobile Body & Fender

BUN WARMERS—See Warmers Bun

BUNCHING TWINE—See Twine Jute

BUNG STARTERS—See Starters Bung

BUNGS, Cork

Armstrong Cork Co Lancaster Pa
Coyne & Paddock Inc 40-09 21 St Long Island City NY
Dodge Cork Co Inc P O Box 989 Lancaster Pa

BUNGS Wooden

Estes E B & Sons 100 Fifth Av NY 11
Sommer John Faucet Co 7 Davis St Harrison NJ
Tatem Mfg Co Eastford Conn

BUNSEN BURNERS—SEE Burners Bunsen

BUOYS, Mooring Etc.

American Pad & Textile Co 511 N Salmon St
New Orleans 19
Dayton Marine Products Eaton Bros Corp Hamburg NY
Hand'i—See Lehigh Sales & Products Co
Lehigh Sales & Products Co 1929-51 Vultree St
Allentown Pa
***Mac-Pak—See McHutchison & Co**
***McHutchison & Co 695 Grand Av Ridgefield NJ**
Multiwall Bag Div West Virginia Pulp & Paper Co 1400
Annunciation St New Orleans 3 La

BURLAP BAGS—See Bags Burlap

Local offices
in major cities to
meet your training
and service requiremen

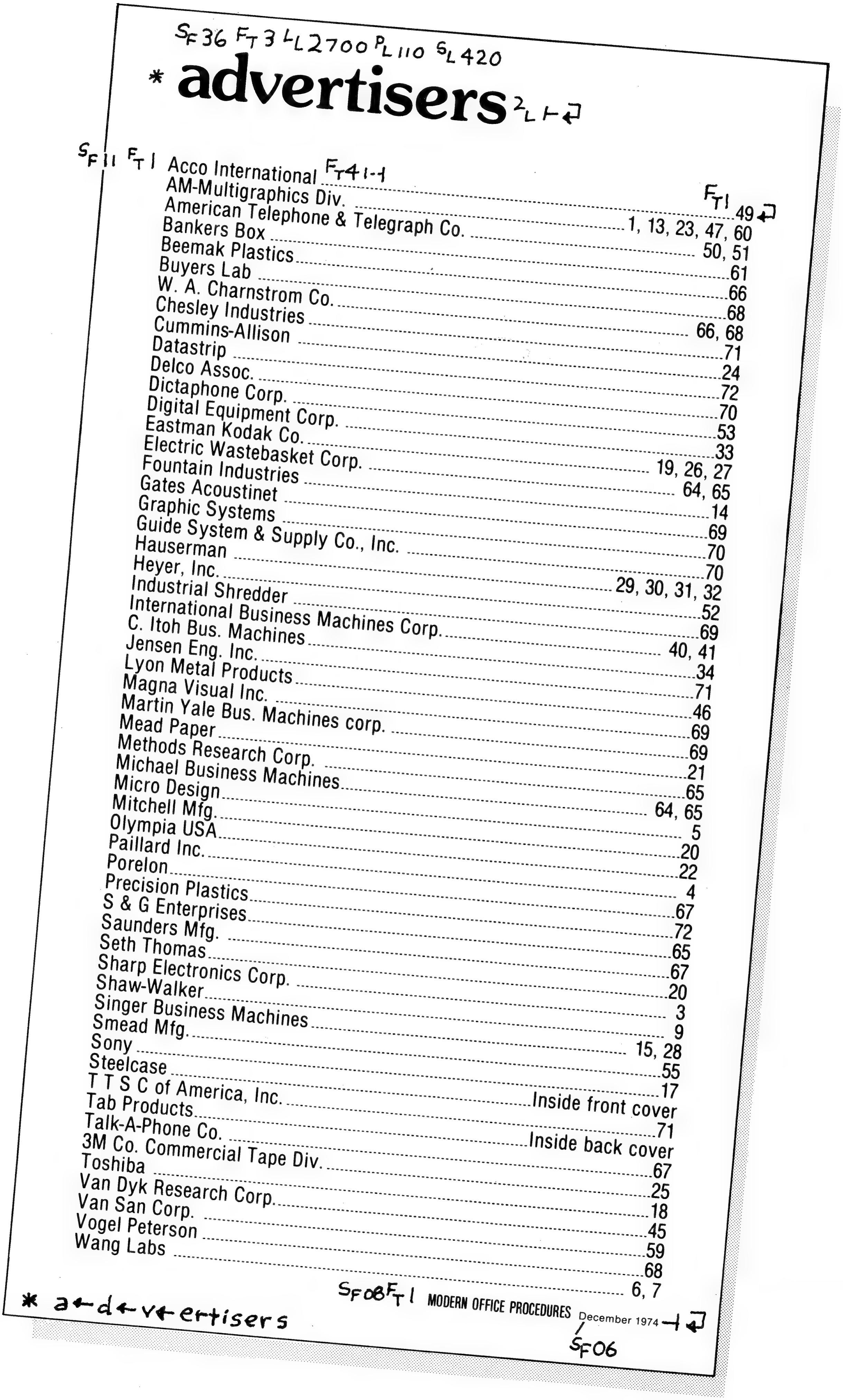
Atlanta, Georgia
Akron, Ohio
Albany, New York
Boston, Massachusetts
Baltimore, Maryland
Birmingham, Alabama
Charlotte, North Carolina
Chicago, Illinois
Cincinnati, Ohio
Cleveland, Ohio
Columbus, Ohio
allas, Texas
enver, Colorado
es Moines, Iowa
troit, Michigan
den City, New York
ford, Connecticut
ton, Texas
apolis, Indiana
s City, Missouri
lle, Kentucky
geles, California
mphis, Tennessee

Mia
Milv
Min
Mou
New
New
Oklal
Omal
Peoria
Phoen
Philad
Pittsbu
Richmc
Roches
Sacram
Salt Lak
San Ant
San Dieg
San Jose
St. Louis
San Fran
Washingto

DEPARTMENTS	
Accounting	350
Accounts Payable	381
Accounts Receivable	382
Administrative	201
Advertising	280/282
Applications Software	337
Auditing	350
Billing	370
Boiler Room	287
Cafeteria	397
Composition	322
Controller	205
Cost	361
Credit	391
Credit Union	267
Customer Coding	378
Dark Room—factory	438
Dark Room—office	297
Demo Room	279
Dispatch & Expediting	420
Drafting Room	464
Drill Press	432
EDP—Keypunch	349
EDP—Production	346
EDP—Planning	331
EDP—Programming	343
EDP—Systems	341
Electro/Set Assembly	443
Employee Relations	415
Engineering	464
Engraving	436
Fabrication	435
Field Accounting	356
Filing	327
Final Assembly	440
	368
	353
	445
	325
	433
	431
	326
	358
	251
	428
	321
	379
ms	262
	404
	457
	280

Size	Description/Material	Width	Diameter
8 x ⅞	LOCK TYPE, CLEAR PLASTIC	1⅜	9⅛
8 x 2	LOCK TYPE, BLUE PLASTIC	1⅝	9⅛
10½ x ⅞	LID TYPE, PLASTIC CAN	¾	10¾
10½ x 1	LID TYPE, METAL CAN	1½	10¾
10½ x 1	CLASP TYPE, BLUE PLASTIC	1⅝	11¾
14 x ¾	LID TYPE PLASTIC CAN	¾	14¼
14 x 1	TYPE, METAL CAN	1⅝	14

ADDRESSOGRAPH MULTIGRAPH
VARITYPER DIVISION



SF36 FT3 LL2700 PL110 SL420

* advertisers 2L ⊢↵

SF11 FT1 Acco International FT41-1	FT1 49 ↵
AM-Multigraphics Div.	1, 13, 23, 47, 60
American Telephone & Telegraph Co.	50, 51
Bankers Box	61
Beemak Plastics	66
Buyers Lab	68
W. A. Charnstrom Co.	66, 68
Chesley Industries	71
Cummins-Allison	24
Datastrip	72
Delco Assoc.	70
Dictaphone Corp.	53
Digital Equipment Corp.	33
Eastman Kodak Co.	19, 26, 27
Electric Wastebasket Corp.	64, 65
Fountain Industries	14
Gates Acoustinet	69
Graphic Systems	70
Guide System & Supply Co., Inc.	70
Hauserman	29, 30, 31, 32
Heyer, Inc.	52
Industrial Shredder	69
International Business Machines Corp.	40, 41
C. Itoh Bus. Machines	34
Jensen Eng. Inc.	71
Lyon Metal Products	46
Magna Visual Inc.	69
Martin Yale Bus. Machines corp.	69
Mead Paper	21
Methods Research Corp.	65
Michael Business Machines	64, 65
Micro Design	5
Mitchell Mfg.	20
Olympia USA	22
Paillard Inc.	4
Porelon	67
Precision Plastics	72
S & G Enterprises	65
Saunders Mfg.	67
Seth Thomas	20
Sharp Electronics Corp.	3
Shaw-Walker	9
Singer Business Machines	15, 28
Smead Mfg.	55
Sony	17
Steelcase	Inside front cover
T T S C of America, Inc.	71
Tab Products	Inside back cover
Talk-A-Phone Co.	67
3M Co. Commercial Tape Div.	25
Toshiba	18
Van Dyk Research Corp.	45
Van San Corp.	59
Vogel Peterson	68
Wang Labs	6, 7

SF08 FT1 MODERN OFFICE PROCEDURES December 1974 ⊣↵
SF06

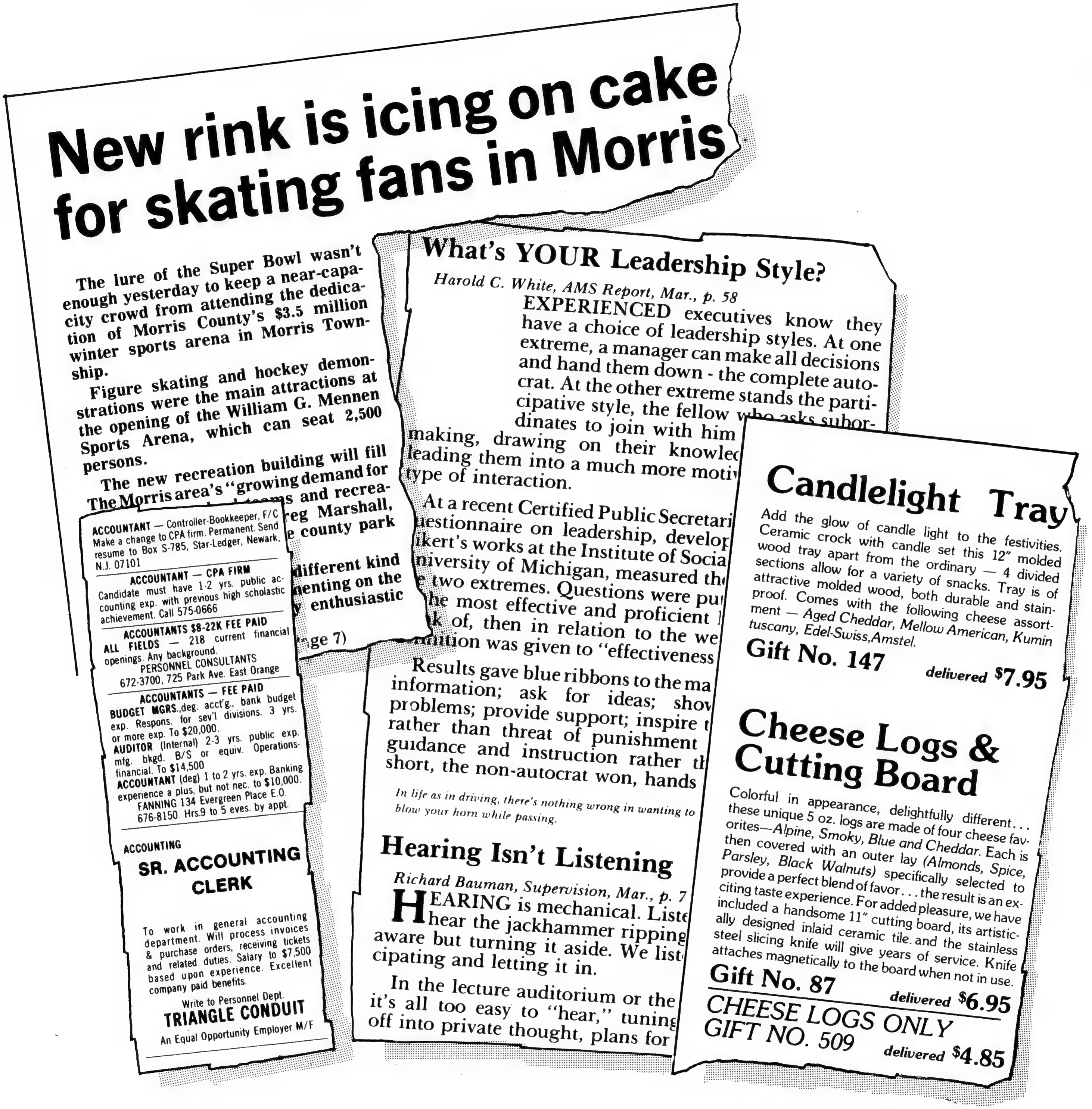
* a←d←v←ertisers

advertisers

Acco International 49
AM-Multigraphics Div. 1, 13, 23, 47, 60
American Telephone & Telegraph Co. 50, 51
Bankers Box 61
Beemak Plastics 66
Buyers Lab 68
W. A. Charnstrom Co. 66, 68
Chesley Industries 71
Cummins-Allison 24
Datastrip 72
Delco Assoc. 70
Dictaphone Corp. 53
Digital Equipment Corp. 33
Eastman Kodak Co. 19, 26, 27
Electric Wastebasket Corp. 64, 65
Fountain Industries 14
Gates Acoustinet 69
Graphic Systems 70
Guide System & Supply Co., Inc. 70
Hauserman 29, 30, 31, 32
Heyer, Inc. 52
Industrial Shredder 69
International Business Machines Corp. 40, 41
C. Itoh Bus. Machines 34
Jensen Eng. Inc. 71
Lyon Metal Products 46
Magna Visual Inc. 69
Martin Yale Bus. Machines corp. 69
Mead Paper 21
Methods Research Corp. 65
Michael Business Machines 64, 65
Micro Design 5
Mitchell Mfg. 20
Olympia USA 22
Paillard Inc. 4
Porelon 67
Precision Plastics 72
S & G Enterprises 65
Saunders Mfg. 67
Seth Thomas 20
Sharp Electronics Corp. 3
Shaw-Walker 9
Singer Business Machines 15, 28
Smead Mfg. 55
Sony 17
Steelcase .... Inside front cover
T T S C of America, Inc. 71
Tab Products .... Inside back cover
Talk-A-Phone Co. 67
3M Co. Commercial Tape Div. 25
Toshiba 18
Van Dyk Research Corp. 45
Van San Corp. 59
Vogel Peterson 68
Wang Labs 6, 7

applications

NEWSPAPER



New rink is icing on cake for skating fans in Morris

The lure of the Super Bowl wasn't enough yesterday to keep a near-capacity crowd from attending the dedication of Morris County's $3.5 million winter sports arena in Morris Township.

Figure skating and hockey demonstrations were the main attractions at the opening of the William G. Mennen Sports Arena, which can seat 2,500 persons.

The new recreation building will fill
The Morris area's "growing demand for
s and recrea-
reg Marshall,
e county park

different kind
nenting on the
y enthusiastic

ge 7)

ACCOUNTANT — Controller-Bookkeeper, F/C Make a change to CPA firm. Permanent. Send resume to Box S-785, Star-Ledger, Newark, N.J. 07101

ACCOUNTANT — CPA FIRM
Candidate must have 1-2 yrs. public accounting exp. with previous high scholastic achievement. Call 575-0666

ACCOUNTANTS $8-22K FEE PAID
ALL FIELDS — 218 current financial openings. Any background.
PERSONNEL CONSULTANTS
672-3700, 725 Park Ave. East Orange

ACCOUNTANTS — FEE PAID
BUDGET MGRS.,deg. acct'g., bank budget exp. Respons. for sev'l divisions. 3 yrs. or more exp. To $20,000.
AUDITOR (Internal) 2-3 yrs. public exp. mfg. bkgd. B/S or equiv. Operations-financial. To $14,500
ACCOUNTANT (deg) 1 to 2 yrs. exp. Banking experience a plus, but not nec. to $10,000.
FANNING 134 Evergreen Place E.O.
676-8150. Hrs.9 to 5 eves. by appt.

ACCOUNTING

SR. ACCOUNTING CLERK

To work in general accounting department. Will process invoices & purchase orders, receiving tickets and related duties. Salary to $7,500 based upon experience. Excellent company paid benefits.

Write to Personnel Dept.
TRIANGLE CONDUIT
An Equal Opportunity Employer M/F

What's YOUR Leadership Style?

Harold C. White, AMS Report, Mar., p. 58

EXPERIENCED executives know they have a choice of leadership styles. At one extreme, a manager can make all decisions and hand them down - the complete autocrat. At the other extreme stands the participative style, the fellow who asks subordinates to join with him
making, drawing on their knowlec
leading them into a much more moti
type of interaction.

At a recent Certified Public Secretari
uestionnaire on leadership, develop
ikert's works at the Institute of Socia
niversity of Michigan, measured th
e two extremes. Questions were pu
he most effective and proficient
k of, then in relation to the we
nition was given to "effectiveness

Results gave blue ribbons to the ma
information; ask for ideas; show
problems; provide support; inspire t
rather than threat of punishment
guidance and instruction rather th
short, the non-autocrat won, hands

In life as in driving, there's nothing wrong in wanting to blow your horn while passing.

Hearing Isn't Listening

Richard Bauman, Supervision, Mar., p. 7

HEARING is mechanical. Liste
hear the jackhammer ripping
aware but turning it aside. We list
cipating and letting it in.

In the lecture auditorium or the
it's all too easy to "hear," tuning
off into private thought, plans for

Candlelight Tray

Add the glow of candle light to the festivities. Ceramic crock with candle set this 12" molded wood tray apart from the ordinary — 4 divided sections allow for a variety of snacks. Tray is of attractive molded wood, both durable and stain-proof. Comes with the following cheese assortment — *Aged Cheddar, Mellow American, Kumin tuscany, Edel-Swiss,Amstel.*

Gift No. 147 ***delivered*** **$7.95**

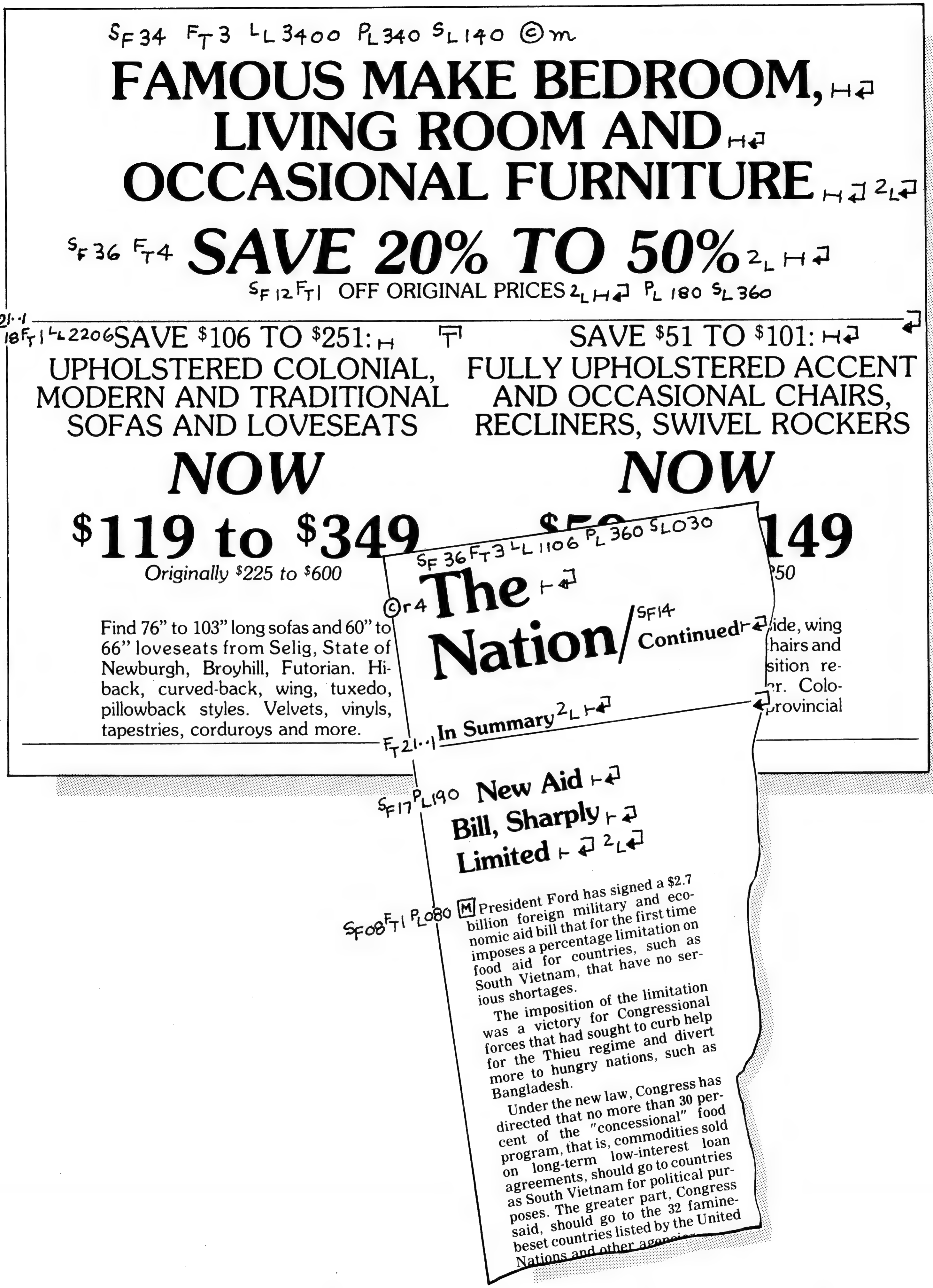
Cheese Logs & Cutting Board

Colorful in appearance, delightfully different... these unique 5 oz. logs are made of four cheese favorites—*Alpine, Smoky, Blue and Cheddar.* Each is then covered with an outer lay *(Almonds, Spice, Parsley, Black Walnuts)* specifically selected to provide a perfect blend of favor . . . the result is an exciting taste experience. For added pleasure, we have included a handsome 11" cutting board, its artistically designed inlaid ceramic tile. and the stainless steel slicing knife will give years of service. Knife attaches magnetically to the board when not in use.

Gift No. 87 ***delivered*** **$6.95**

CHEESE LOGS ONLY
GIFT NO. 509 ***delivered*** **$4.85**

ADDRESSOGRAPH MULTIGRAPH
VARITYPER DIVISION


SF34 FT3 LL3400 PL340 SL140 ©m
SF36 FT4
SF12 FT1
PL180 SL360
FT21·1
SF18 FT1 LL2206
SF36 FT3 LL1106 PL360 SL030
©r4
SF14
FT21··1
SF17 PL190
SF08 FT1 PL080

FAMOUS MAKE BEDROOM,
LIVING ROOM AND
OCCASIONAL FURNITURE

SAVE 20% TO 50%

OFF ORIGINAL PRICES

SAVE $106 TO $251:

UPHOLSTERED COLONIAL,
MODERN AND TRADITIONAL
SOFAS AND LOVESEATS

NOW

$119 to $349

Originally $225 to $600

Find 76" to 103" long sofas and 60" to 66" loveseats from Selig, State of Newburgh, Broyhill, Futorian. Hi-back, curved-back, wing, tuxedo, pillowback styles. Velvets, vinyls, tapestries, corduroys and more.

SAVE $51 TO $101:

FULLY UPHOLSTERED ACCENT
AND OCCASIONAL CHAIRS,
RECLINERS, SWIVEL ROCKERS

NOW

$5

149

50

ide, wing
hairs and
sition re-
r. Colo-
provincial

The Nation/ Continued

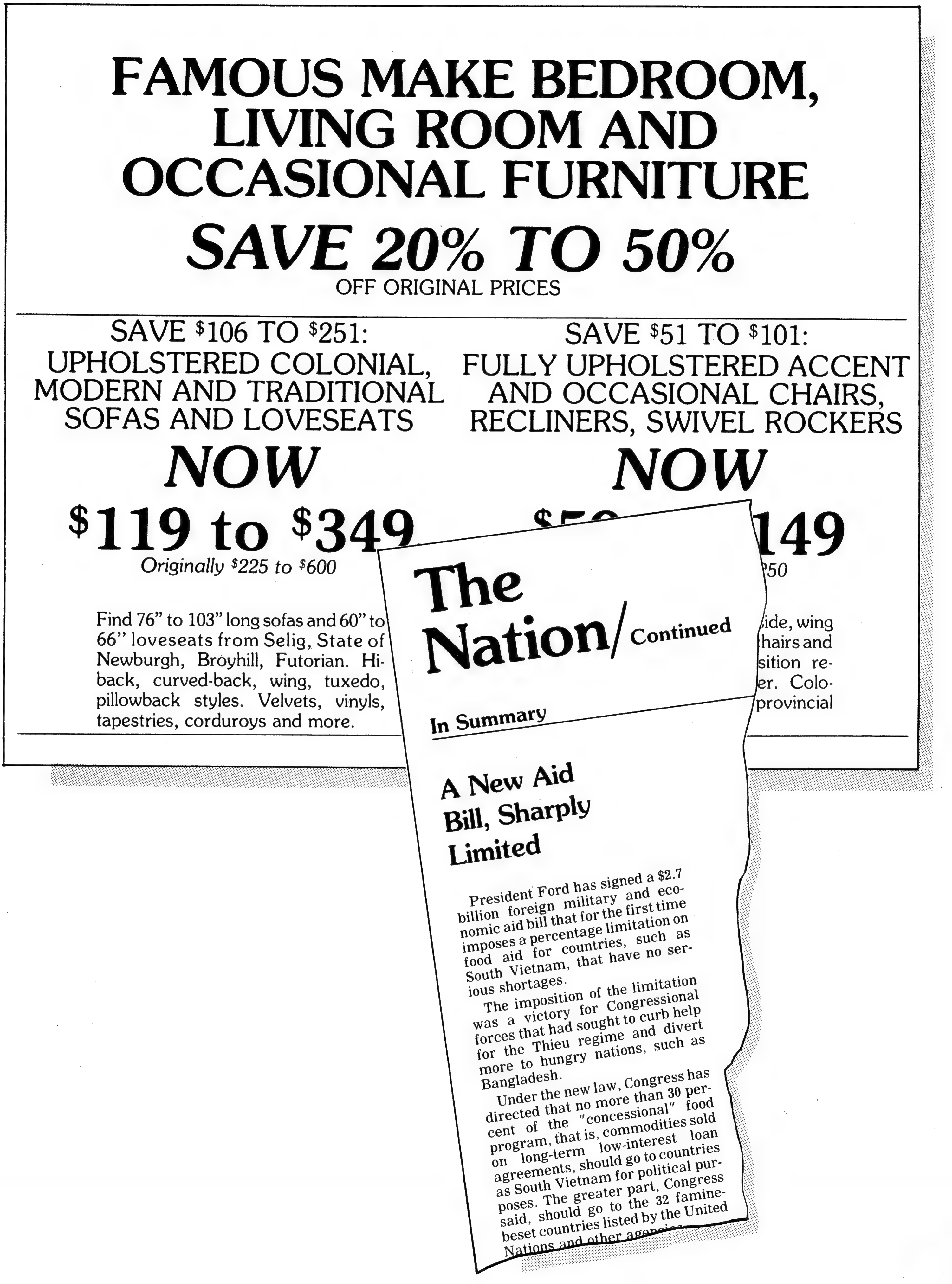
In Summary

New Aid Bill, Sharply Limited

President Ford has signed a $2.7 billion foreign military and economic aid bill that for the first time imposes a percentage limitation on food aid for countries, such as South Vietnam, that have no serious shortages.

The imposition of the limitation was a victory for Congressional forces that had sought to curb help for the Thieu regime and divert more to hungry nations, such as Bangladesh.

Under the new law, Congress has directed that no more than 30 percent of the "concessional" food program, that is, commodities sold on long-term low-interest loan agreements, should go to countries as South Vietnam for political purposes. The greater part, Congress said, should go to the 32 famine-beset countries listed by the United Nations and other



FAMOUS MAKE BEDROOM, LIVING ROOM AND OCCASIONAL FURNITURE

SAVE 20% TO 50%

OFF ORIGINAL PRICES

SAVE $106 TO $251:
UPHOLSTERED COLONIAL, MODERN AND TRADITIONAL SOFAS AND LOVESEATS

NOW

$119 to $349

Originally $225 to $600

Find 76" to 103" long sofas and 60" to 66" loveseats from Selig, State of Newburgh, Broyhill, Futorian. Hi-back, curved-back, wing, tuxedo, pillowback styles. Velvets, vinyls, tapestries, corduroys and more.

SAVE $51 TO $101:
FULLY UPHOLSTERED ACCENT AND OCCASIONAL CHAIRS, RECLINERS, SWIVEL ROCKERS

NOW

$5 149

250

ide, wing
hairs and
sition re-
er. Colo-
provincial

The Nation/ Continued

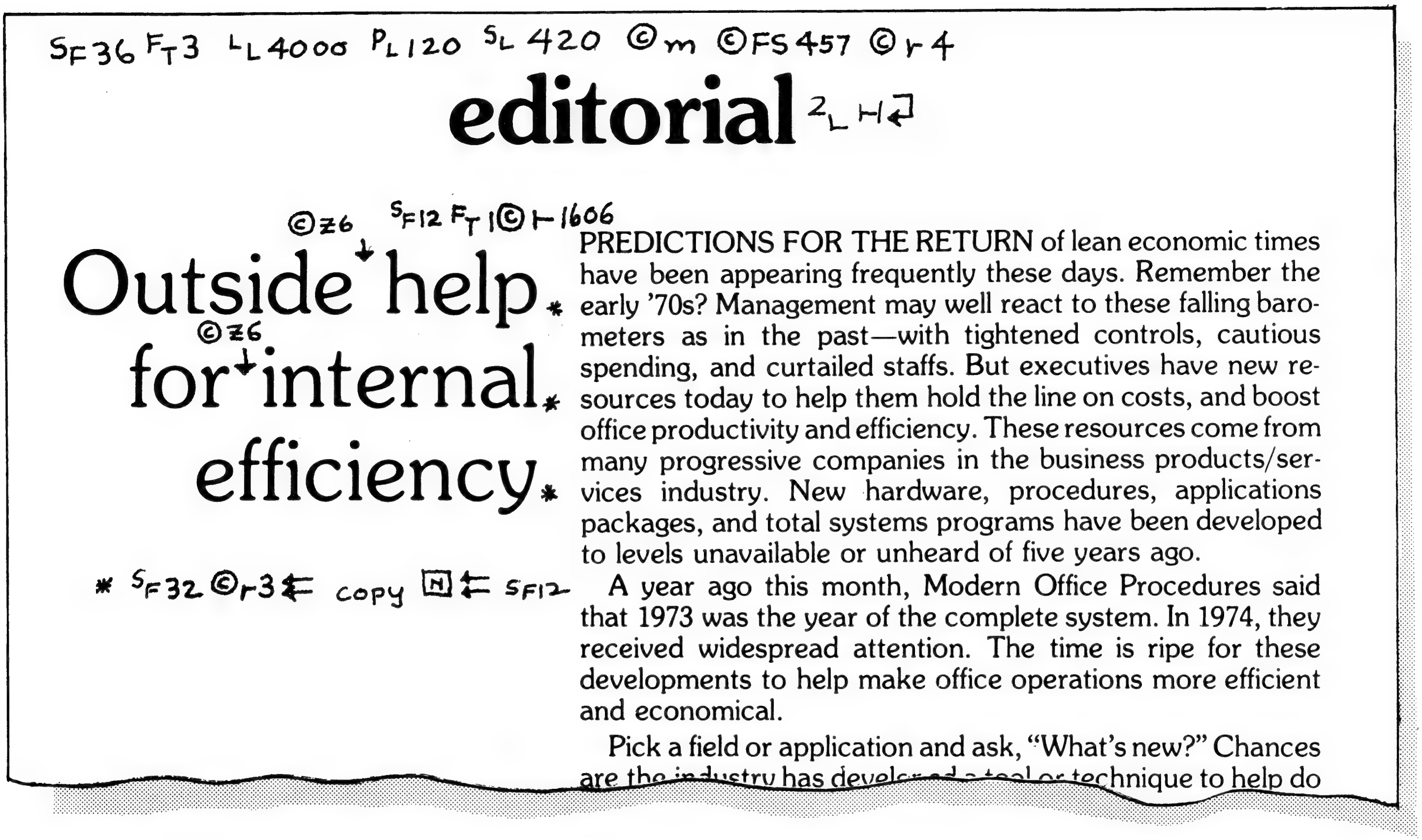
In Summary

A New Aid Bill, Sharply Limited

President Ford has signed a $2.7 billion foreign military and economic aid bill that for the first time imposes a percentage limitation on food aid for countries, such as South Vietnam, that have no serious shortages.

The imposition of the limitation was a victory for Congressional forces that had sought to curb help for the Thieu regime and divert more to hungry nations, such as Bangladesh.

Under the new law, Congress has directed that no more than 30 per cent of the "concessional" food program, that is, commodities sold on long-term low-interest loan agreements, should go to countries as South Vietnam for political purposes. The greater part, Congress said, should go to the 32 famine-beset countries listed by the United Nations and other agencies



SF36 FT3 LL4000 PL120 SL420 ©m ©FS457 ©r4

editorial 2L H↵

©z6 SF12 FT1 ©⊢1606

Outside ↓help * for ↓internal * efficiency *

©z6

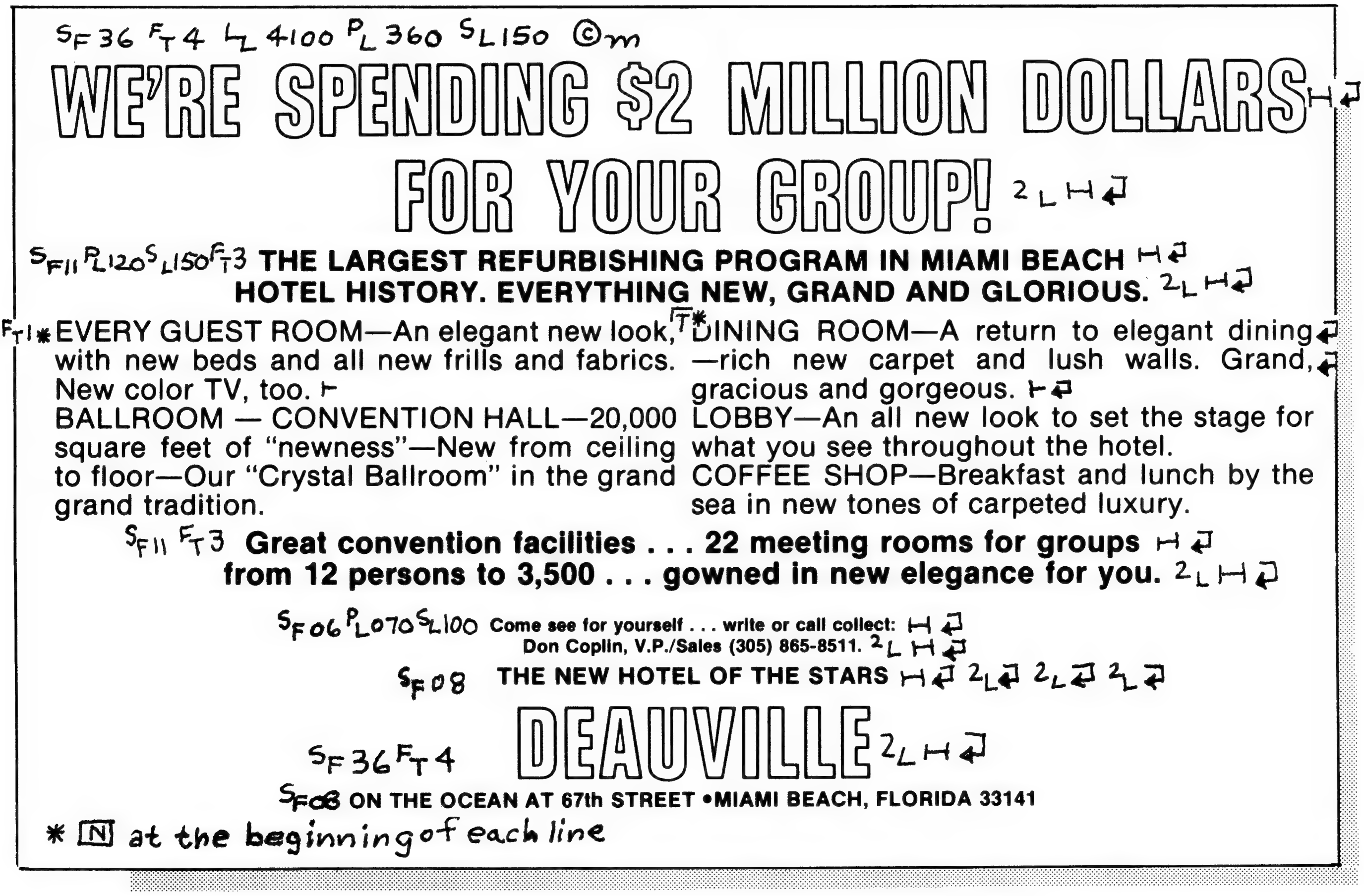
* SF32 ©r3 ⇇ copy [N] ⇇ SF12

PREDICTIONS FOR THE RETURN of lean economic times have been appearing frequently these days. Remember the early '70s? Management may well react to these falling barometers as in the past—with tightened controls, cautious spending, and curtailed staffs. But executives have new resources today to help them hold the line on costs, and boost office productivity and efficiency. These resources come from many progressive companies in the business products/services industry. New hardware, procedures, applications packages, and total systems programs have been developed to levels unavailable or unheard of five years ago.

A year ago this month, Modern Office Procedures said that 1973 was the year of the complete system. In 1974, they received widespread attention. The time is ripe for these developments to help make office operations more efficient and economical.

Pick a field or application and ask, "What's new?" Chances are the industry has developed a tool or technique to help do

---



SF36 FT4 LL4100 PL360 SL150 ©m

WE'RE SPENDING $2 MILLION DOLLARS H↵
FOR YOUR GROUP! 2L H↵

SF11 PL120 SL150 FT3 **THE LARGEST REFURBISHING PROGRAM IN MIAMI BEACH** H↵
HOTEL HISTORY. EVERYTHING NEW, GRAND AND GLORIOUS. 2L H↵

LL2106 FT1 * EVERY GUEST ROOM—An elegant new look, with new beds and all new frills and fabrics. New color TV, too. ⊢
BALLROOM — CONVENTION HALL—20,000 square feet of "newness"—New from ceiling to floor—Our "Crystal Ballroom" in the grand grand tradition.

T* DINING ROOM—A return to elegant dining ↵
—rich new carpet and lush walls. Grand, ↵
gracious and gorgeous. ⊢↵
LOBBY—An all new look to set the stage for what you see throughout the hotel.
COFFEE SHOP—Breakfast and lunch by the sea in new tones of carpeted luxury.

SF11 FT3 **Great convention facilities . . . 22 meeting rooms for groups** H↵
from 12 persons to 3,500 . . . gowned in new elegance for you. 2L H↵

SF06 PL070 SL100 **Come see for yourself . . . write or call collect:** H↵
Don Coplin, V.P./Sales (305) 865-8511. 2L H↵

SF08 **THE NEW HOTEL OF THE STARS** H↵ 2L↵ 2L↵ 2L↵

SF36 FT4 **DEAUVILLE** 2L H↵

SF08 **ON THE OCEAN AT 67th STREET •MIAMI BEACH, FLORIDA 33141**

* [N] at the beginning of each line

editorial

Outside help for internal efficiency

PREDICTIONS FOR THE RETURN of lean economic times have been appearing frequently these days. Remember the early '70s? Management may well react to these falling barometers as in the past—with tightened controls, cautious spending, and curtailed staffs. But executives have new resources today to help them hold the line on costs, and boost office productivity and efficiency. These resources come from many progressive companies in the business products/services industry. New hardware, procedures, applications packages, and total systems programs have been developed to levels unavailable or unheard of five years ago.

A year ago this month, Modern Office Procedures said that 1973 was the year of the complete system. In 1974, they received widespread attention. The time is ripe for these developments to help make office operations more efficient and economical.

Pick a field or application and ask, "What's new?" Chances are the industry has developed a tool or technique to help do

WE'RE SPENDING $2 MILLION DOLLARS FOR YOUR GROUP!

THE LARGEST REFURBISHING PROGRAM IN MIAMI BEACH HOTEL HISTORY. EVERYTHING NEW, GRAND AND GLORIOUS.

EVERY GUEST ROOM—An elegant new look, with new beds and all new frills and fabrics. New color TV, too.

BALLROOM — CONVENTION HALL—20,000 square feet of "newness"—New from ceiling to floor—Our "Crystal Ballroom" in the grand grand tradition.

DINING ROOM—A return to elegant dining —rich new carpet and lush walls. Grand, gracious and gorgeous.

LOBBY—An all new look to set the stage for what you see throughout the hotel.

COFFEE SHOP—Breakfast and lunch by the sea in new tones of carpeted luxury.

Great convention facilities . . . 22 meeting rooms for groups from 12 persons to 3,500 . . . gowned in new elegance for you.

Come see for yourself . . . write or call collect:
Don Coplin, V.P./Sales (305) 865-8511.

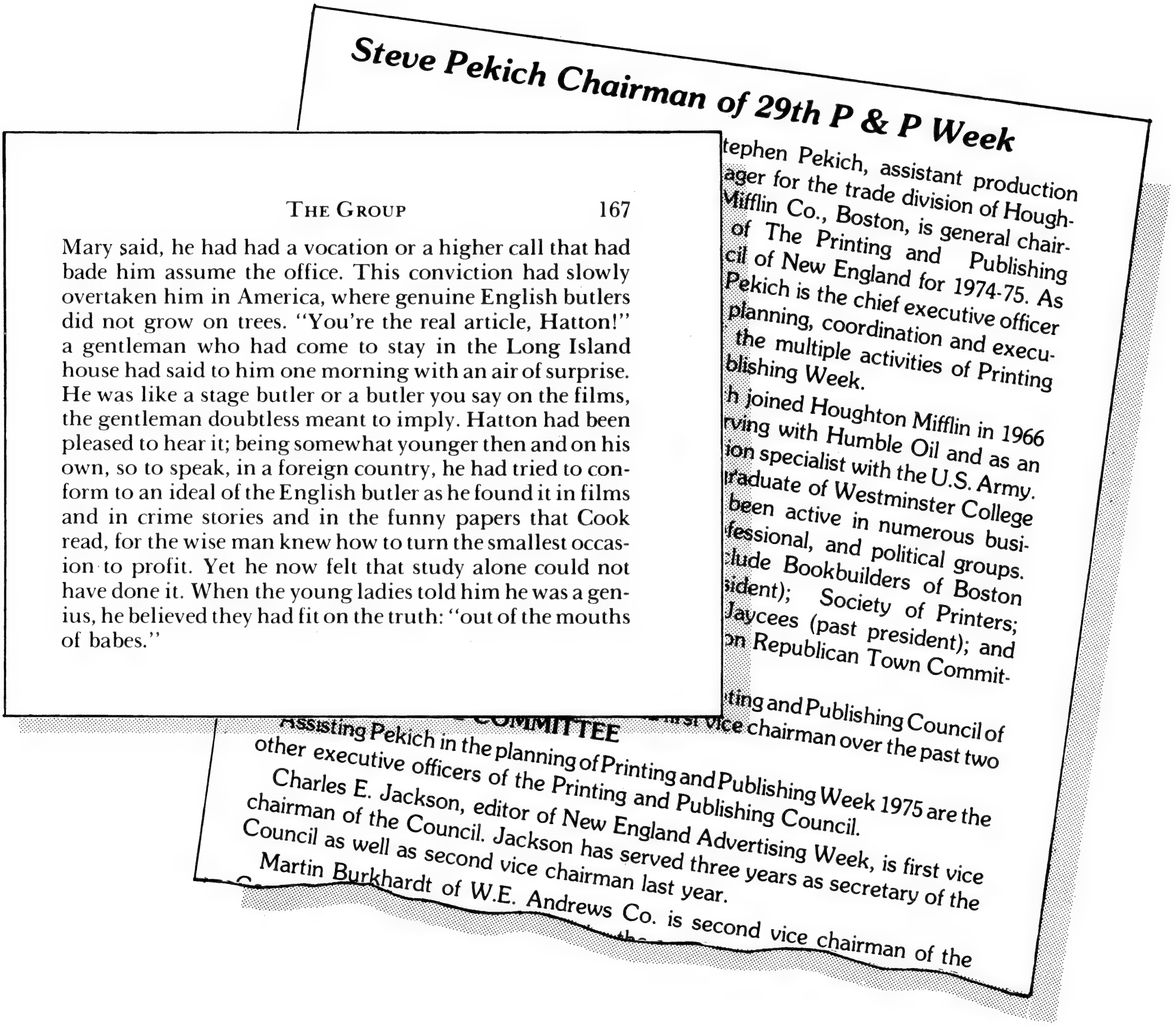
THE NEW HOTEL OF THE STARS

DEAUVILLE

ON THE OCEAN AT 67th STREET •MIAMI BEACH, FLORIDA 33141

applications

PUBLICATIONS



THE GROUP 167

Mary said, he had had a vocation or a higher call that had bade him assume the office. This conviction had slowly overtaken him in America, where genuine English butlers did not grow on trees. "You're the real article, Hatton!" a gentleman who had come to stay in the Long Island house had said to him one morning with an air of surprise. He was like a stage butler or a butler you say on the films, the gentleman doubtless meant to imply. Hatton had been pleased to hear it; being somewhat younger then and on his own, so to speak, in a foreign country, he had tried to conform to an ideal of the English butler as he found it in films and in crime stories and in the funny papers that Cook read, for the wise man knew how to turn the smallest occasion to profit. Yet he now felt that study alone could not have done it. When the young ladies told him he was a genius, he believed they had fit on the truth: "out of the mouths of babes."

Steve Pekich Chairman of 29th P & P Week

tephen Pekich, assistant production
ager for the trade division of Hough-
Mifflin Co., Boston, is general chair-
of The Printing and Publishing
cil of New England for 1974-75. As
Pekich is the chief executive officer
planning, coordination and execu-
the multiple activities of Printing
blishing Week.

h joined Houghton Mifflin in 1966
rving with Humble Oil and as an
ion specialist with the U.S. Army.
raduate of Westminster College
been active in numerous busi-
fessional, and political groups.
clude Bookbuilders of Boston
sident); Society of Printers;
Jaycees (past president); and
on Republican Town Commit-

ting and Publishing Council of
vice chairman over the past two

COMMITTEE

Assisting Pekich in the planning of Printing and Publishing Week 1975 are the other executive officers of the Printing and Publishing Council.

Charles E. Jackson, editor of New England Advertising Week, is first vice chairman of the Council. Jackson has served three years as secretary of the Council as well as second vice chairman last year.

Martin Burkhardt of W.E. Andrews Co. is second vice chairman of the

SF30 FT1 LL4500 PL110 SL300

Financial Review 2L ⊢ ↵ and Summary of Accounting Policies 2L ⊢ ↵

↵

SF11 FT3 LL2100 SL180

RESEARCH, DEVELOPMENT ⊢ ↵ AND ENGINEERING 2L ⊢ ↵

SF10 FT2

M *Research, development and engineering costs related to future and present products are expensed as incurred.* 2L ⊢ ↵

FT1 M Expenditures for research, development and engineering were down in 1974 as a result of cost-reduction programs and establishment of new priorities. Expenditures totaled $20,007,000, compared to $24, 015,000 for 1973. 2L ⊢ ↵

DEPRECIATION

The company and its subsidiaries utilize the straight-line method of computing depreciation for financial reporting purposes. Depreciation rates are based on estimated useful lives of the assets. Leasehold improvements are amortized over the terms of the various leases.

The final provision for depreciation amounted to $17,497,000 in 1974 and $14,764,000 in 1973.

PENSIONS

Total pension expense includes, as to principal plans, current service costs, plus amortization of prior service costs over a 30-year period. All pension expense accrued is funded.

The company and its subsidiaries have pension plans both contributory and non-contributory, covering substantially all of their employees. The total pension expense for the years ended July 31, 1974 and 1973 was $8,894,000 and $6,855,000 respectively. The actuarially computed value of vested benefits as of the most recent valuation date adjusted for pension improvements negotiated in 1974 exceed the current market value of pension fund assets and balance sheet accruals by approximately $19,200,000. At July 31, 1973 the current market value of the pension fund assets exceeded vested benefits.

LEASES

The company and its subsidiaries have various cancellable and non-cancellable leases with minimum annual rentals aggregating approximately $18,807,000 at July 31, 1974 and $15,629,000 at July 31, 1973. The company also pays taxes, insurance and other expenses related to most of the leased premises. Minimum rental commitments under non-cancellable leases for major categories of property are as follows:

SF08 LL0706 FT1 LL1306 FT21..1

	Minimum Commitments		
	Real Estate	*Vehicles & Equipment*	*Total*
1975	*$8,475,000*	*$6,009,000*	*$14,484,000*
1976	*8,069,000*	*4,970,000*	*13,039,000*
1977	*7,342,000*	*3,210,000*	*10,552,000*
1978	*6,934,000*	*650,000*	*7,584,000*
1979	*5,920,000*	*12,000*	*5,932,000*
1980-84	*22,053,000*	*32,000*	*22,085,000*
1985-89	*10,805,000*		*10,805,000*
1990-94	*3,828,000*		*3,828,000*
1995 and thereafter	*102,000*	*102,000*	
	LL0406⊣	LL0406⊣	LL0406⊣

Non-capitalized financing leases (as defined by the Securities and Exchange Commission) are not significant.

MAINTENANCE AND REPAIRS

Maintenance and repair costs are expensed as incurred. Costs of renewals and betterments are capitalized.

ACCOUNTS RECEIVABLE

Accounts receivable (after allowance of $8,820,000 for doubtful accounts) of $132,750,000 at July 31, 1974, represents an increase of $9,936,000 over the balance at the end of 1973. There was an improvement in collections during the year. However, accounts receivable increased as a result of higher sales.

Financial Review and Summary of Accounting Policies

RESEARCH, DEVELOPMENT AND ENGINEERING

Research, development and engineering costs related to future and present products are expensed as incurred.

Expenditures for research, development and engineering were down in 1974 as a result of cost-reduction programs and establishment of new priorities. Expenditures totaled $20,007,000, compared to $24, 015,000 for 1973.

DEPRECIATION

The company and its subsidiaries utilize the straight-line method of computing depreciation for financial reporting purposes. Depreciation rates are based on estimated useful lives of the assets. Leasehold improvements are amortized over the terms of the various leases.

The final provision for depreciation amounted to $17,497,000 in 1974 and $14,764,000 in 1973.

PENSIONS

Total pension expense includes, as to principal plans, current service costs, plus amortization of prior service costs over a 30-year period. All pension expense accrued is funded.

The company and its subsidiaries have pension plans both contributory and non-contributory, covering substantially all of their employees. The total pension expense for the years ended July 31, 1974 and 1973 was $8,894,000 and $6,855,000 respectively. The actuarially computed value of vested benefits as of the most recent valuation date adjusted for pension improvements negotiated in 1974 exceed the current market value of pension fund assets and balance sheet accruals by approximately $19,200,000. At July 31, 1973 the current market value of the pension fund assets exceeded vested benefits.

LEASES

The company and its subsidiaries have various cancellable and non-cancellable leases with minimum annual rentals aggregating approximately $18,807,000 at July 31, 1974 and $15,629,000 at July 31, 1973. The company also pays taxes, insurance and other expenses related to most of the leased premises. Minimum rental commitments under non-cancellable leases for major categories of property are as follows:

	Minimum Commitments		
	Real Estate	*Vehicles & Equipment*	*Total*
1975	*$8,475,000*	*$6,009,000*	*$14,484,000*
1976	*8,069,000*	*4,970,000*	*13,039,000*
1977	*7,342,000*	*3,210,000*	*10,552,000*
1978	*6,934,000*	*650,000*	*7,584,000*
1979	*5,920,000*	*12,000*	*5,932,000*
1980-84	*22,053,000*	*32,000*	*22,085,000*
1985-89	*10,805,000*		*10,805,000*
1990-94	*3,828,000*		*3,828,000*
1995 and thereafter	*102,000*	*102,000*	

Non-capitalized financing leases (as defined by the Securities and Exchange Commission) are not significant.

MAINTENANCE AND REPAIRS

Maintenance and repair costs are expensed as incurred. Costs of renewals and betterments are capitalized.

ACCOUNTS RECEIVABLE

Accounts receivable (after allowance of $8,820,000 for doubtful accounts) of $132,750,000 at July 31, 1974, represents an increase of $9,936,000 over the balance at the end of 1973. There was an improvement in collections during the year. However, accounts receivable increased as a result of higher sales.

SF 30 FT1 LL 4200 PL 320 SL720 ©M

Consolidated Statements of Income and Retained Earnings

FT21··1

SF12 FT3 PL120 SL020 LL2800

FOR THE YEAR ENDED JULY 31	1974	1973
SALES AND OTHER INCOME:		
Net sales	$417,783,000	$375,545,000
Service billings and machine rentals	123,050,000	114,304,000
Interest, discount and other income	9,969,000	8,609,000
COST AND EXPENSES:		
Cost of products and services sold	328,341,000	274,363,000
Branch and commission expenses	115,495,000	103,787,000
Other selling, advertising, general and administrative expenses	69,899,000	62,030,000
Research, development and engineering expenses	20,007,000	24,015,000
Interest and debt expenses	14,456,000	8,664,000
Special expenses	—	20,175,000
	548,198,000	493,034,000
INCOME BEFORE INCOME TAXIS AND CREDITS		
Provision for federal and foreign income taxes	2,296,000	2,195,000
INCOME BEFORE EXTRAORDINARY CREDITS	308,000	3,229,000
EXTRAORDINARY CREDITS	—	1,214,000
NET INCOME	$ 308,000	$ 4,443,000
INCOME PER SHARE OF COMMON STOCK		
Income before extraordinary credits	$ .04	$ .04
Extraordinary credits	—	.15
Net income	$ .04	$ .55
RETAINED EARNINGS AT BEGINNING OF YEAR	$118,408,000	118,788,000
Net income	308,000	4,443,000
	118,716,000	123,231,000
Dividends paid—$.45 per share ($.60 per share in 1973)	3,617,000	4,823,000
RETAINED EARNINGS AT END OF YEAR	$115,099,000	$118,408,000

FT21··1 (repeat)

The Financial Review and Summary of Accounting Policies on pages 16 through 21 is an integral part of this and related statements.

SF08 FT1 LL4200

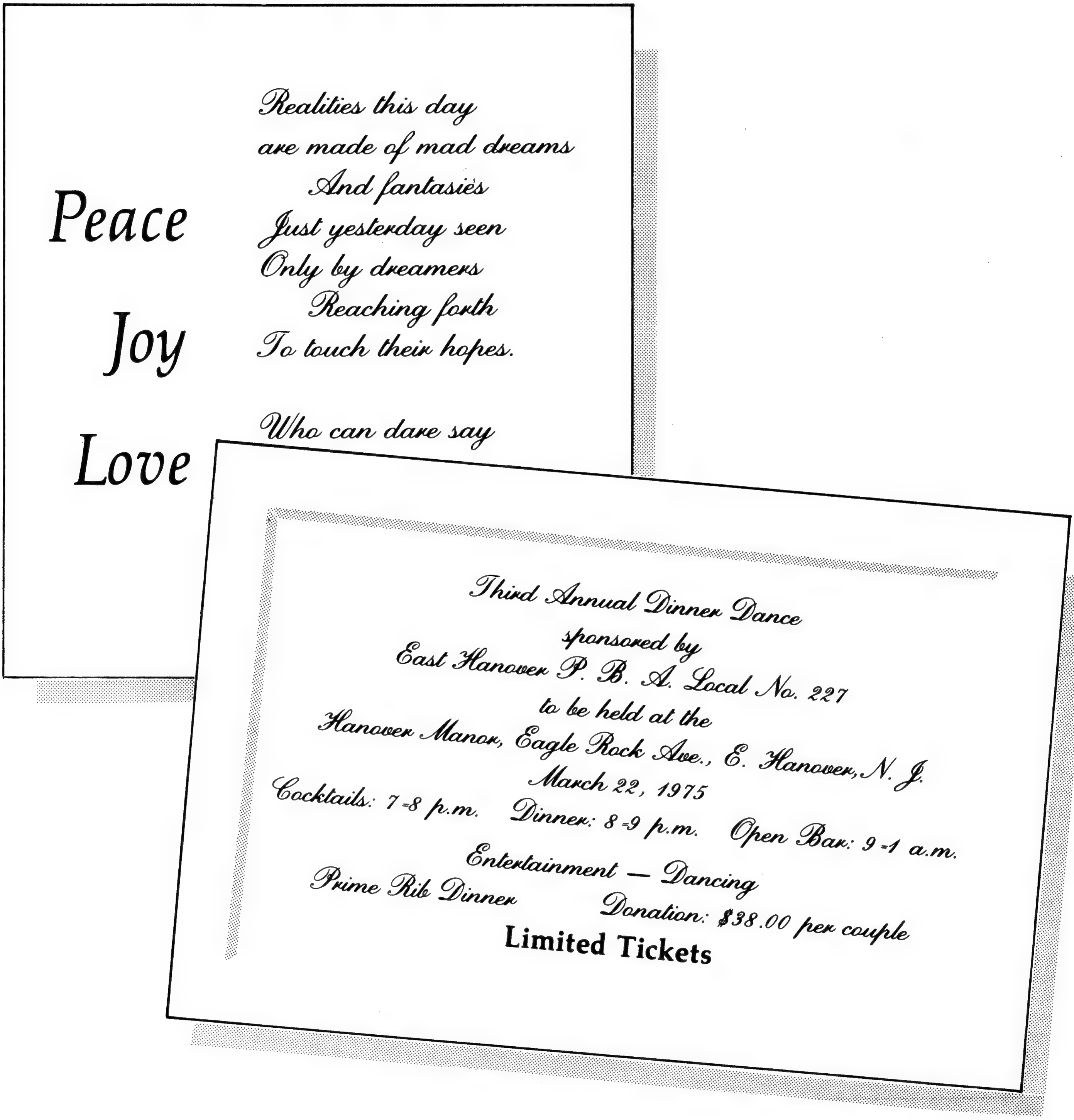
SF06 FT2

Consolidated Statements of Income and Retained Earnings

FOR THE YEAR ENDED JULY 31	1974	1973
SALES AND OTHER INCOME:		
Net sales	$417,783,000	$375,545,000
Service billings and machine rentals	123,050,000	114,304,000
Interest, discount and other income	9,969,000	8,609,000
COST AND EXPENSES:		
Cost of products and services sold	328,341,000	274,363,000
Branch and commission expenses	115,495,000	103,787,000
Other selling, advertising, general and administrative expenses	69,899,000	62,030,000
Research, development and engineering expenses	20,007,000	24,015,000
Interest and debt expenses	14,456,000	8,664,000
Special expenses	—	20,175,000
	548,198,000	493,034,000
INCOME BEFORE INCOME TAXIS AND CREDITS		
Provision for federal and foreign income taxes	2,296,000	2,195,000
INCOME BEFORE EXTRAORDINARY CREDITS	308,000	3,229,000
EXTRAORDINARY CREDITS	—	1,214,000
NET INCOME	$ 308,000	$ 4,443,000
INCOME PER SHARE OF COMMON STOCK		
Income before extraordinary credits	$ .04	$ .04
Extraordinary credits	—	.15
Net income	$ .04	$ .55
RETAINED EARNINGS AT BEGINNING OF YEAR	$118,408,000	118,788,000
Net income	308,000	4,443,000
	118,716,000	123,231,000
Dividends paid—$.45 per share ($.60 per share in 1973)	3,617,000	4,823,000
RETAINED EARNINGS AT END OF YEAR	$115,099,000	$118,408,000

The Financial Review and Summary of Accounting Policies on pages 16 through 21 is an integral part of this and related statements.

applications
SPECIALITY



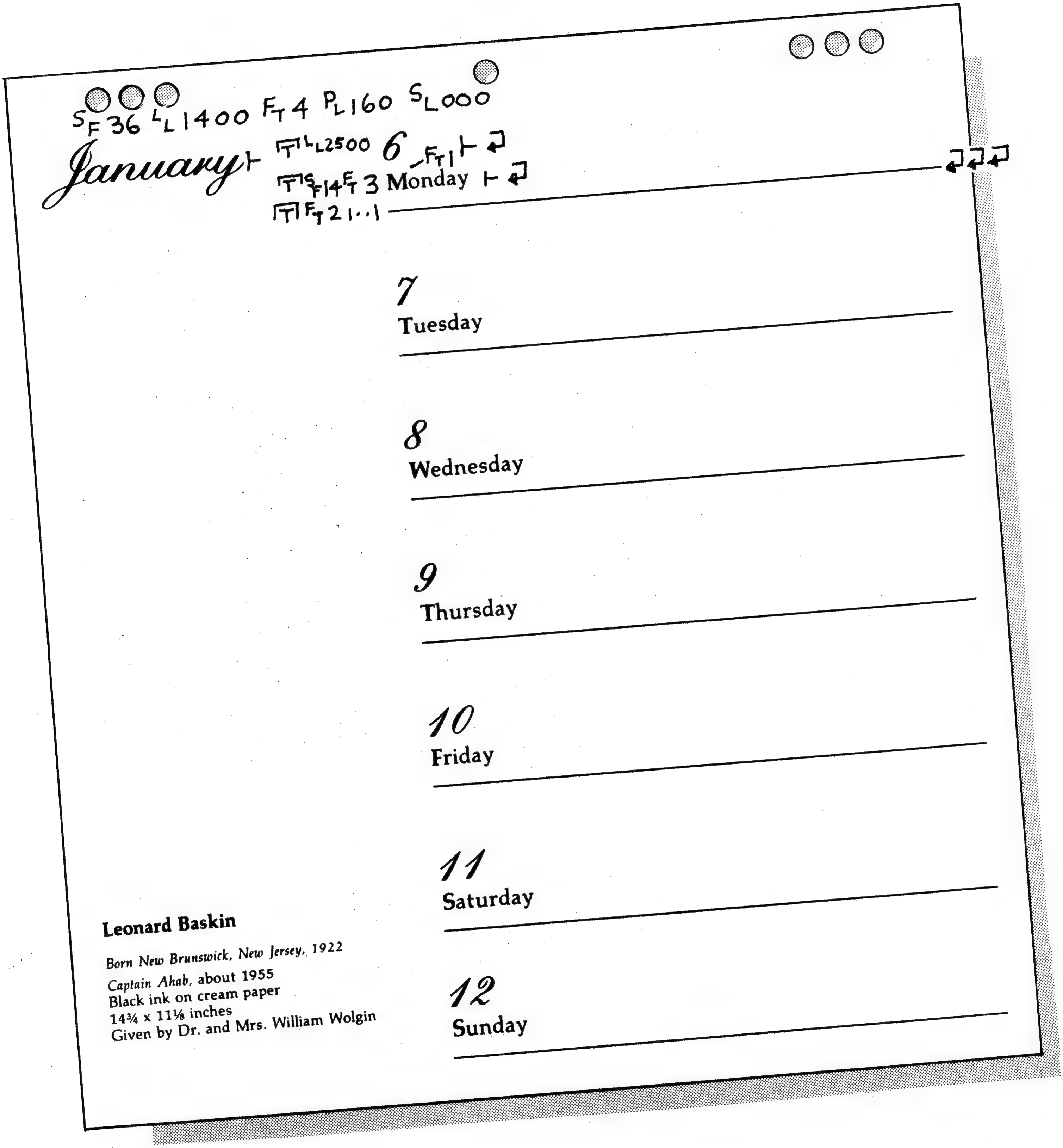
Peace
Joy
Love

Realities this day
are made of mad dreams
And fantasies
Just yesterday seen
Only by dreamers
Reaching forth
To touch their hopes.

Who can dare say

Third Annual Dinner Dance
sponsored by
East Hanover P. B. A. Local No. 227
to be held at the
Hanover Manor, Eagle Rock Ave., E. Hanover, N. J.
March 22, 1975
Cocktails: 7-8 p.m. Dinner: 8-9 p.m. Open Bar: 9-1 a.m.
Entertainment — Dancing
Prime Rib Dinner Donation: $38.00 per couple
Limited Tickets

ADDRESSOGRAPH MULTIGRAPH
VARITYPER DIVISION



S_F36 $^L{}_L$1400 F_T4 P_L160 S_L000

January ⊢ ⊤ $^L{}_L$2500 *6* $_F_T$1 ⊢ ↵ ↵↵↵

⊤ $^S{}_F$14 $^F{}_T$3 Monday ⊢ ↵

⊤ F_T21..1

7
Tuesday

8
Wednesday

9
Thursday

10
Friday

11
Saturday

12
Sunday

Leonard Baskin

Born New Brunswick, New Jersey, 1922
Captain Ahab, about 1955
Black ink on cream paper
14¾ x 11⅛ inches
Given by Dr. and Mrs. William Wolgin

January

6
Monday

7
Tuesday

8
Wednesday

9
Thursday

10
Friday

11
Saturday

12
Sunday

Leonard Baskin

Born New Brunswick, New Jersey, 1922

Captain Ahab, about 1955
Black ink on cream paper
14¾ x 11⅛ inches
Given by Dr. and Mrs. William Wolgin

product options

Comp/Set®

phototypesetting
systems

ADDRESSOGRAPH MULTIGRAPH

3500/4500 WITH RECORD/PLAYBACK MODULE

OPERATING INSTRUCTIONS

504

COUNTING

INTRODUCTION

The 504 record/playback module allows you to read and save the characters you type on a Comp/Set phototypesetter. All the characters and functions are stored on a diskette and once created, you can replay the diskette for additional printouts of a job, or revise, update and store the job for future reference.

The 504 module is much more than a recording and playback mechanism. It is a complete software package that allows you to automatically search, correct, insert and rejustify text. It transforms your phototypesetter into a total keyboarding system with update and storage capabilities.

DISKETTES

The A/M diskettes you use with your phototypesetter are flexible, magnetic discs enclosed in plastic jackets with openings.

The interior of the jcaket is lines with a soft wiping material that cleans the diskette as you use it. There are two kinds of diskettes.

Program Diskettes

Program Diskettes are used to condition the C/S. You received two copies of a program diskette (one is a spare). This program diskette contains the non-counting program, the counting program, the directory and extra memory files. You cannot record on this diskette.

Job Diskettes

Job Diskettes are used to record and revise your typesetting projects.

You can store up to 288,000 characters on one diskette. That's approximately 230 double-spaced typewritten pages.

If you record a variety of different jobs, you can distribute these 288,000 characters into smaller storage areas by selecting a particular format for the diskette.

For example, if you have a number of small jobs, divide a diskette into twenty-four storage areas that each have 12,000 characters. This is format 1. The twenty-four storage areas in format 1 are assigned letters to distinguish one from another. Format 1 has storage areas, or files, lettered a to x.

If you have longer jobs, divide a diskette into twelve storage areas, or files, that each have 24,000 characters. This is format 2 and its files are lettered a to l.

For even longer jobs, divide a diskette into six storage areas that each have 48,000 characters. This is format 3 and its files are lettered a to f.

For the maximum storage, divide the diskette into two storage areas of 144,000 characters. This is format 4 and its files are lettered a and b.

Whenever you insert a job diskette, always verify the format of the diskette. You can have only one format for each diskette.

If you change the diskette format, be sure that there is nothing recorded on the diskette in the old format that you want saved.

Inserting a Diskette

To insert a diskette:

1. Open the diskette door by pressing the horizontal bar below it.
2. With the label side up and the notched edge facing into the slot, slide the diskette into the slot and gently push it until it clicks into position.
3. Slide the door down until it snaps shut.

Removing a Diskette

To remove a diskette:

1. Press the horizontal bar below the diskette door. The diskette ejects.

Handling Diskettes

The diskette can be reused indefinitely, but you should follow some prcautions to guarantee its life.

Return the diskette to its storage envelope whenever you remove it from the typesetter.

Keep diskettes away from magnetic fields or materials that are easily magnetized (e.g., paper clips, metal copy stands, etc.). These strong magnetic fields can distort information recorded on the diskette.

Replace the storage envelopes when they become worn, cracked or distorted. The envelopes are designed to protect the diskette.

Always use a felt tipped pen to write on the plastic jacket or storage envelope. Never use pencil or ball point pen.

Keep smoking materials as well as food or beverages away from the diskettes.

Keep diskettes away from direct heat or sunlight.

The diskette has its own cleaning surface on the inside of the jacket. Avoid touching or cleaning the diskette surface. Scratches on the diskette may cause loss of stored data.

When you order diskettes, they arrive with a supply of gunned tabs that cover the notched edge of the diskette. To record anything on the diskette, the tab must cover the notch on the diskette.

THE COUNTING PROGRAM

LOADING THE COUNTING PROGRAM MAIN PROGRAM

Whenever you turn your phototypesetter on, load the 504 program diskette before doing anything.

1. Insert the counting program diskette and slide the door down until it snaps shut.
2. Press RESET, MEMORY to start the loading cycle. The small light below the diskette door comes on while the phototypesetter reads this initial conditioning, then it goes off.
3. LP a-r displays on the screen. Press the lower case a ~~(or j)~~ and check that the red light on the diskette door is on. When the light goes off, LP a-r reappears.
4. ~~Press CURSOR LEFT, DATA. The screen clears and the red light goes off. When the function field appears, remove the program diskette.~~

The 504 option is now conditioned for your typesetting operations.

Selecting a Format for Job Diskettes

1. Insert a job, or working, diskette.
2. Press READ. The format number for that diskette displays in the upper right on the function field. The number 5 displays as an operational message and the C/S beeps.
3. If the diskette format number is the one you want, begin your reading or writing operation.
4. If the diskette format number is not what you want, change it by pressing FILE, f and the format number you want, 1-4. This new format number displays in the upper right on the function field.

   NOTES: New diskettes display format 2 when you first insert them in the C/S. Change this format number to whatever format you need. Dont't change diskette format numbers if you already have information stored using a particular format number.

You can use a Comp/Set counting program in several different ways.

1. Use it as a typesetter and record the text and functions while you keyboard.
2. Use it to update a recorded job while you typeset it.

3. Use it to search through a recorded job without typesetting it.
4. Use it as a direct entry phototypesetter without recording anything.

A Direct Entry Phototypesetter

When you turn the phototypesetter on, press RESET, DATA, fill in the function field and begin keyboarding and typesetting without recording anything on a diskette. Any time you turn the phototypesetter on, or finish an operation using diskettes, you can use the typesetter alone.

Turning the Typesetter Off

You might want to record a job on a diskette before typesetting it, or correct a recorded job before typesetting it.

To turn the typesetter off, press CONTROL, t. Two blinking vertical bars display on the upper right side of the function field verifying that the typesetter is turned off.

To turn the typesetter back on, press CONTROL, t again.

Turning the typesetter off and then on later is especially helpful when only a portion of a recorded job needs updating or typesetting.

Recording - Writing

As you keyboard a job, you can also record the characters and functions and store them on a diskette. In this case, you may or may not want the typesetter on, but you definitely want to activate the 504 option.

To record, or write, on a diskette:

1. Load the counting program, if necessary.
   Press the File and Read
2. Insert your job diskette.
3. Press READ. The diskette format number displays in the upper right on the function field. Change the format number if necessary by pressing FILE, f 1-4.
4. Press FILE, WRITE and a letter (a-x) to define which storage area you want to write in. The letter displays in the upper right side of the function field verifying that this storage area, or file, is ready.
5. Keyboard the job. (Notice that your line length remainder

automatically counts down as you keyboard.)

6. Instruct the typesetter to close that storage area, by pressing FILE, WRITE, SINGLE ERASE.

7. Begin writing in another storage area by pressing FILE, WRITE and another letter (a-x) or

8. Use the phototypesetter to read another file or set type without recording, or

9. Remove the diskette by pressing the horizontal bar below the diskette door.

Making Corrections - Reading and Writing

You can read one recorded storage area on the diskette and at the same time record it in another area. You can stop reading at any point, make corrections, insert new copy or functions, then continue reading and writing. If just a draft copy is needed, you can instruct the C/S to print at a faster, proofing speed. The original recording never changes, but the new recording includes the original good copy, plus all the new additions. You can never accidentally read and write in the same file.

Whether you need a proof copy, or an edited final copy, you can also use automatic search to quickly locate a particular error or correction point. Two extra keys on the keyboard help make revisions faster - READ and SEARCH.

To read from one storage area and write into another:

1. If necessary load the counting program, then remove it and insert your job, or working diskette.

2. Press READ. The diskette format number displays in the upper right side of the function field.

3. Press FILE, READ and the letter of the storage area you want to read. This letter displays in the upper right on the function field.

At this point, your original recording is ready. Now set up a storage area to write, or record, this updated job.

1. Press FILE, WRITE and the letter of a new storage area. This letter also displays in the upper right side of the function field next to the letter of your original recording.

Now your original recording is ready to begin reading and your new storage area is ready to begin writing.

1. If you want the typesetter to print a faster, proofing copy, press CONTROL q. A "Q" displays in the function field.

   If you use the CONTROL q, your copy might not meet quality typesetting standards, but it will be acceptable for a proofing copy. The typesetter prints at 70 lines per minute in this proof mode.

   To cancel the proof mode, press CONTROL, q again.

2. Press READ. The copy from the original recording displays on the screen and is recorded in the new storage area at the same time.

To temporarily stop reading:

1. Press READ. Make corrections or additions.

To resume reading:

1. Press READ again.

Slowing Down the Reading Process

Because the C/S reads so quickly, using the READ key to start and stop doesn't always position copy correctly on the screen for you to make corrections. To slow reading to a character at a time:

1. Press READ to begin reading.

2. Press CURSOR RIGHT. Reading stops at the next non-function character.

3. Press CURSOR RIGHT again. Each time the cursor right key is pressed, the next recorded character displays.

4. When you reach a correction point (either a typo, insert, or deletion), press READ. This stops reading and the R in the function field goes off.

5. Make the correction, then resume reading by pressing READ again, or pressing READ the CURSOR RIGHT.

Searching

In many instances, you may not want to monitor reading a job as you make corrections. If you know where the errors or changes should take place, the 504 option has an automatic search capability that helps you locate particular points in the copy.

A SEARCH FIELD displays in the lower right side of the function field and has room for five characters. You can change these five characters any time during a reading operation.

To search for a particular character combination while you're updating a recorded job:

1. Set up the C/S to read and write.
   Press FILE, READ and the letter of the storage area on the diskette you want to read from.
   Press FILE, WRITE and the letter of the storage area on the diskette you want to write into.

   Press CONTROL, SEARCH. The search field in the lower right side of the function field clears if anything was there.

2. Type up to 5 characters. These characters display in the lower right of the function field. Once 5 characters are typed a prolonged beep sounds indicating that the search field automatically closed. (If your search field has fewer than 5 characters, you must close it by pressing SEARCH again.)

3. Press SEARCH. The C/S begins to search through the recorded job as it displays on the screen and at the same time looks for a match that the search field defines. An "S" displays in the function field to verify that you are searching. The "S" goes off once a match is found.

4. At the first match, the searching stops. The "S" on the function field goes off and the keyboard is free to make any changes, inserts, ~~or~~ deletions. or Begin ~~Reading~~ Printing by pressing READ

   The characters in the search field, however, remain in the field until you change them by pressing CONTROL, SEARCH, type the next search characters and press SEARCH or clear the search field by pressing CONTROL, SEARCH, SEARCH.

5. To search to the next defined position, press CONTROL, SEARCH, and type the next unique five-character combination, then press SEARCH to begin the next search operation.

You can move from reading to searching or searching to reading as you update a file. If you're searching for digits, be sure the search field is unique enought that the searching doesn't stop in the middel of a function or command digit.

If you accidentally press SEARCH and begin a searching operation you can stop searching by pressing READ or CURSOR RIGHT followed by READ. This stops the searching operation and you can begin again.

Reading - Playing Back

You can play back a recorded job and read the copy and functions stored with the job.

You can do this with the typesetter off, if you just want to see what's on the diskette.

Or you can read a recorded job with the typesetter on. This might be good if you only have a few minor changes and don't need to save the recording.

In either case, to read a recorded diskette:

1. Load the counting program, if necessary. Remove this diskette and insert the job diskette you want to read.
2. Press READ. The diskette format number displays in the upper right of the function field. You should not change the format number to read the job.
3. Press FILE, READ and a letter (a-x) to define the storage area, or file you want to read. The letter displays in the upper right side of the function field verifying that this storage area is ready.
4. Press READ to begin reading.
5. To temporarily stop reading, press READ.
6. To resume reading, press READ again.
7. When you're finished reading a recorded job, the reading cycle automatically stope. If you're in the middle of a reading file and if you want to close the reading operation, press READ to stop reading, then press FILE, READ, y. The "R" and file letter in the function field go off.

Using the Tab/Data Option With Record/Playback

If the C/S you're using has the tab/data option, you have up to 99 tab and data memories that make recording and editing columnar work easier.

By using the tab and data memories while you record a file, you can edit and correct the file without restoring the memories. You can even record the tab and data memories in a separate memory file for jobs that use the same format.

Rerunning Jobs with the Tab/Data Option

If you stored tab memories and then recorded a job file, every time you press TAB the information stored in that memory displays on the screen and records in your file.

If you need to revise the job, all the information for each tab is recorded in the file. When you read that file back to create an updated file:

1. Set up the C/S to read and write.
   Press FILE, READ and the letter of the storage area on the diskette you want to read from.
   Press FILE, WRITE and the letter of the storage area on the diskette you want to write into.

2. Clear the tab/data memory areas by pressing CONTROL, TAB 00, WORD ERASE, or index to an unused tab location. If you don't clear the memory or index beyond it, your new file will record the tab information twice - once from memory and once from your original file.

3. Be sure your file was recorded in the manual mode. If it wasn't, press CONTROL m.

4. Make revisions or corrections to the job as necessary.

Tab Suppress

Some tab jobs are updated on a regular basis. These jobs use the same format every time the job is updated and often have large portions of the job that are unchanging.

You could store the tab memory and rekeyboard the job every time the job is updated. Or, you could revise the job by searching through the file.

There is another way to store the job that makes future revisions easier.

First, store the tab memory. At the same time you're storing the memory, record a file that has this tab memory information. Then record the job file using the tab suppress insturction.

Tab suppress is a kind of switch code. When you use this feature to record a job, every time you press TAB, you're telling the C/S to switch to the next tab memory and use that information for that column. Each time you press TAB the C/S moves to the next tab memory. The information stored in each tab displays as you call out the tabs. Your job file, however, only records the tab and the text you type.

To record a file with your tab memories:

1. Mark up the tab job using a C/S layout form.
2. Set up the function field and put the typesetter in the manual mode.
3. Press CONTROL, TAB, 00, WORD ERASE to clear any other information that might be stored in the tab memory.
4. Open a file to begin writing.
5. Press CONTROL, TAB, 01 and store the information for the first tab. Follow this with a TAB.
6. Press CONTROL, TAB, 02 and type the information for the second tab followed by a TAB.
7. Continue storing the tab memories until the last tab, then press RETURN and close the file.

To record the job file using tab suppress:

1. Be sure the tab memory is stored in the C/S.
   You can type this information each time you need it, or just read in the tab memory file.
2. Open a file to begin writing in it.
3. Pres CONTROL, c, TAB. The tab symbol displays in the function field next to TAB. Press CONTROL, c, TAB to stop the suppress.
4. Type the job. Only the tab and the text you type are recorded in the file. Nothing is recorded from memory.

Whenever this file needs updating, either store the memory again or or read in the memory file. Then just search through your job file. Because your job file only has the text and the tab instruction, it's much easier to search for a correction point.

If you use tab suppress, you must use it throughout the entire job. You can't use it for a portion of the job. If you update the job, however, you can read in your memory file, and then create an updated file without using tab suppress.

Tab suppress is especially good for parts listings, or price sheets or when you're using an off-line keyboard.

File Halt

A HALT command, CONTROL, h, recorded in a file instructs the C/S to stop when the file is reread. This is useful when you want to change a type disc in the middle of a job. When you use a halt code:

1. Always precede a CONTROL, h with a character or fixed space. A halt cannot be the first character on a line.
2. Enter only one CONTROL, h per line. If you enter more than one, only the last one records on your diskette.
3. When reading stops at your CONTROL, h, the "R" goes off on the function field. If you want to keep the halt command in the updated file, re-enter the CONTROL, h and resume your reading operation.

MAINTENANCE AND TROUBLESHOOTING

Erasing A File

When you update recorded files, both the original and updated job are stored on your diskette. If you only want to save the updated file, you may erase the original file. However,this is not necessary. Writing into a file erases what was in the file preceeding present writing.

1. Open the original file to write in it by pressing FILE, WRITE, and the file letter.
2. Close the file by pressing FILE, WRITE, SINGLE ERASE.

Another way to erase a file:

1. Open the original file to write in it by pressing FILE, WRITE and the file letter.

2. Press FILE, WORD ERASE and the file letter.

Erasing the Entire Diskette

It's unlikely that you'll ever need to erase the entire diskette, but if for security reasons you feel it necessary, to erase the entire diskette:

1. Press FILE, WRITE, z, FILE, WORD ERASE, z.

Opening the Wrong Write File

There might be a time when you'll open a write file (FILE, WRITE and a file letter) and realize that you didn't want to record anything new in that file. The information in that file could be a job that you need to save. To save this information, eject the diskette and begin again. Do not close the write file. If you do, you erase the file. Re-insert the job diskette and press READ to verify the diskette format. Open the correct write file and begin your operation again.

504 UTILITY PROGRAM

Because the floppy diskette is a magnetic medium, verifying exactly what and where you keyboarded functions and text for a particular job is sometimes difficult.

Your program diskette has a special utility that allows you to check exactly what was recorded in each file on your diskette. This utility is extremely helpful if you want to check an entire job diskette or just one file on the diskette.

To load the utility:

1. Insert your counting program diskette.
2. Press RESET, MEMORY - LP a-r displays on the screen.
3. Press i or r.
4. When LP a-r displays again, press RESET, DATA and the function field displays.
5. Fill in the five basic functions (size, line length, font, primary and secondary leading). You don't need to add a FLUSH LEFT, RETURN after typing these functions.

(If you type FLUSH LEFT, RETURN after the function field instructions, you don't cause a problem. The directory displays your job files in a slightly different sequence.)

6. Press SEARCH.

7. The directory heading displays, Insert your job diskette and press d.

Paging Through the Diskette

The screen fills with the first characters of a block of files according to the format of the diskette.

To advance through to the next block of files, press CURSOR RIGHT. The screen clears then displays the first characters of the next block of files.

Examining a File

To look at the information recorded in a file, type the file letter. (Use lower case) The screen clears and then displays the first 500 characters of the file you selected. The upper right side of the function field displays the file you selected.

To page through the file, press CURSOR RIGHT. The screen clears then displays the next 500 characters of that file. Every time you press CURSOR RIGHT the screen clears, then displays the next 500 characters. When you reach the end of the file, the next time you press CURSOR RIGHT the screen moves to the beginning of the next file and displays the first 500 characters of that file.

All functions (including line length values, leading, indents) display as well as the text.

NOTE: Pressing CURSOR RIGHT advances the next 500 characters. You can not "scroll" through the file. Every time you press CURSOR RIGHT you move to the next 500 characters.

To look at another file, type the file letter. The first 500 characters of that file display.

To return to the file listings, press RETURN. The screen clears then displays the first characters of the first files on the diskette.

When you're finished checking the diskette, eject it. The screen clears and just the Directory title remains. Press RESET, DATA to call the function field back onto the screen. Fill in the function field then load the 504 counting program and begin your next operation.

COUNTING

A

CONTROL FUNCTIONS
504H—PROGRAM 23

Function:	**Control key** = ©
Loading the 504H program	
1. Insert program diskette	Reset Memory
2. Visual *"Disc a-r"* appears on screen	
3. Load program files	
4. Press cursor-left and data keys	
5. Remove program diskette, C/S is ready.	
Insert job diskette	
press READ for format #	
Changing diskette format #	File f #
1 = 24 files x 12,000 codes (a - x file letters)	
2 = 12 files x 24,000 codes (a - l file letters)	
3 = 6 files x 48,000 codes (a - f file letters)	
4 = 2 files x 144,000 codes (a - b file letters)	
Open WRITE file	File Write file letter
Suspense writing	Write
Close WRITE file	File Write single erase
Open READ file	File Read file letter
press READ to start	
Close READ file	File Read y
READ & WRITE	
Open READ file	File Read file letter
Open WRITE file	File Write file letter
to turn on the reading	Read
to turn off the writing	Write
to turn off the reading	Read
Load SEARCH (max. 5 characters)	© Search (characters) Search
Activate SEARCH	Search
Erase file	File Write file letter Return File write single erase

OPERATIONAL MESSAGES	**MSG.**
Overset	1
Tab/Data storage overflowed	2
Tab/Data storage not stored	3
Invalid keyboard command	4
File not open or empty	5
Overflowing or exceeding a file(*)	6
*End of file indicators (4—3—2—1—0)	
4—1000 keystrokes before end-of-file	
3— 750 keystrokes before end-of-file	
2— 500 keystrokes before end-of-file	
1— 250 keystrokes before end-of-file	
0—END-OF-FILE. . . file closed	
Bad read	7
Bad write	8
Possible checksum error in program board	9
Diskette/Drive inoperative	A
a. No diskette in drive	
b. Door open	
c. Diskette drive inoperative	
Write protected-Check job diskette slot	B
Trying to read and write in same file	E
Format number missing (see a or b below)	F
a. Using a program diskette as a job diskette	
b. Job diskette is missing a valid format #	

PROGRAM LOADING:

Program file is failing	C
Door open	D
Memory board is failing	#### M

# means digit

10/19/77

G

EDIT/SCROLL - NON-COUNTING PROGRAM (FLOPPY DISKETTE)

The Edit/Scroll program may be run on any Domestic or International 32K VDI equipped with program 23 or any 3500 or 4500 series Comp/Set equipped with program 23. This program has been designed to enable the operator to edit large blocks of text prior to actual typesetting.

Features of this program include scrolling (up to 15,232 codes), search and replace and the ability to transfer codes from one diskette to another.

TO LOAD THE EDIT/SCROLL PROGRAM:

1. Insert the program diskette. (~~#991011C-VDI, #991018A-3500/4500~~)
2. Press RESET followed by MEM.
3. Visual "DISC a-r" appears on the screen.
4. Press file letter designated on the program diskette chart for your model Comp/Set or VDI. (G)
5. Program loads and function field displays on screen.
6. Remove program diskette.
7. Insert job diskette to activate program.

NOTE: The diskette format is automatically verified when a job diskette is inserted.

TO CHANGE THE FORMAT OF A DISKETTE:

1. Insert job diskette.
2. Press FILE key followed by lower case "f", followed by desired format number (either 1,2,3, or 4).

NOTE: DO NOT CHANGE THE FORMAT OF A DISKETTE THAT CONTAINS PREVIOUSLY RECORDED JOBS YOU MAY NEED TO RETAIN.

TO WRITE TEXT (RECORD) TO A DISKETTE:

1. Insert job diskette.
2. Enter desired format number. FILE key followed by lower case "f" followed by num eral (1,2,3, or 4).
3. Press FILE key followed by WRITE key followed by file letter.
4. Keyboard the text for the job.
5. Position the cursor at the end of the text buffer and press COMMAND key followed by the WRITE key.
6. When text clears the screen, press the FILE key followed by the WRITE key followed by the SINGLE ERASE key to close thefile.

NOTE: Although the write file should be opened at the beginning of your job, the Edit/Scroll program will allow you to open the write file from the text buffer at any time.

TO READ A PREVIOUSLY RECORDED FILE:

1. Insert job diskette.
2. Press FILE key followed by READ key followed by file letter.
3. Press the READ key. The light above the diskette slot comes on. When the light goes off, the first 12,000 codes of that file will fill the text buffer and the first 8 lines of the text buffer will display on the screen.

TO READ FROM ONE FILE AND WRITE TO A DIFFERENT FILE:

1. Insert job diskette.
2. Press the FILE key followed by the READ key followed by letter of the file you want to read.
3. Press the FILE key followed by the WRITE key followed by letter of the file you want to record in.
4. Press READ. The light above the diskette slot goes on. When the light goes off, the first 12,000 codes will fill the text buffer and the first 8 lines of the text buffer will display on the screen.

5. Position the cursor at the end of the text buffer and press the COMMAND key followed by the WRITE key. The first 12,000 codes have been written to the diskette.

6. Press the FILE key followed by the WRITE key followed by the SINGLE ERASE key to close the write file.

TO READ FROM A FILE AND WRITE TO THE SAME FILE:

1. Insert job diskette.

2. Press the FILE key followed by the READ key followed by the file letter.

3. Press the FILE key followed by READ key followed by READ.

4. The light above the diskette slot goes on. When the light goes off, the text buffer fills and the first 8 lines of the text buffer displays on the screen. The read symbol leaves the function field and is replaced by the write symbol.

CORRECTIONS AND EDITING

SCROLLING

Scrolling is the ability to move quickly through a block of text. To enter the "scroll mode", press the WRITE key.A blinking "S" will appear in the function field. (Changes or corrections cannot be made while in the "scroll mode"). To take the program out of the "scroll mode", press the WRITE key again.

To scroll the text up, press the CURSOR RIGHT key. To scroll the text down, press the CURSOR LEFT key. To adjust the scroll speed, press the COMMAND key followed by SPACE BAR followed by a numeral, 0 through 9: nine being the slowest speed. (Note: the scroll speed cannot be changed while in the "scroll mode").

To scroll to the beginning of the text buffer, press lower case "b". To scroll to the next 8 screen lines, press lower case "p". To scroll to the end of the text buffer, press lower case "e".

CURSOR MOVEMENTS

The cursor is a rectangular bar of light that indicates your current position on the screen. The CURSOR LEFT key (arrow pointing to the left) moves the cursor to the left.

The CURSOR RIGHT key (arrow pointing to the right) moves the cursor to the right. A single depression of either key will move the cursor one step to the left or right. If either key is held down, the cursor will continue moving right or left through the text buffer.

The cursor may also be moved up or down. Hold the SHIFT key down and press CURSOR LEFT . The cursor will move down. Hold the SHIFT key down and press CURSOR RIGHT and the cursor will move up.

The speed at which the cursor moves may be altered by pressing the COMMAND key followed by the SPACE BAR followed by a numeral, 0 through 9; zero (0) being the fastest speed and nine (9) being the slowest. The program standard sets the speed at zero (0).

INSERTING COPY

To insert copy, position the cursor one character to the right of the point where copy is to be inserted. Press the INSERT key. Ablinking "I" will appear in the function field. As you keyboard, use a memory segment or read additional text, copy will be inserted from the left of the cursor position.

To de-activate the insert mode, press the INSERT key.

DELETING COPY

The Edit/Scroll program will allow you to delete a character, a word, a line, a screen or the entire text buffer.

Character Delete

To delete a single character, position the cursor over the character to be deleted and press the SINGLE ERASE key. The character will be deleted and the copy will move left to fill the space.

Word Delete

To delete a word, position the cursor at any point within the word to be deleted and press WORD ERASE. The word plus the word space to the right will be deleted. Copy will move left to fill the space.

Line Delete

To delete one full screen line, position the cursor at any point in the line to be deleted and press the COMMAND key followed by the SINGLE ERASE key.

Screen (8 lines) Delete

To delete an entire screen of text (eight full screen lines) press the COMMAND key followed by the WORD ERASE key.

Text Buffer Delete

To delete the entire text buffer, press the COMMAND key followed by the SIZE key, followed by WORD ERASE.

Block Delete

To delete a portion of text, temporarily suspend writing (CONTROL, "l" (el). Position the cursor at the ending point of the text to be deleted and press the COMMAND key followed by the WRITE key. Copy from the beginning of the text buffer to the cursor position will be deleted. Be sure to turn the write back on (CONTROL, "l" (el)) if continuing to write to a file.

PROGRAMMABEL MEMORY

The Edit/Scroll program can store 7,935 codes in programmable memory. The function field will indicate what memory area is currently being stored and will count the total number of codes stored in programmable memory.

Storing Programmable Memory

Ninety-nine (99) programmable memory segments totaling 7,935 codes may be stored. To store a memory segment, press the COMMAND key followed by the MEM key followed by two numerals, 01 through 99. Keyboard the copy to be stored followed by the MEM key to close the memory segment. Once the memory area has been closed, the information stored will leave the screen. This information may be inserted anywhere in the text by pressing the MEM key followed by the appropriate digits.

Define Memory

There may be a certain area within the text that you want to store in programmable memory for future recall. Position the cursor over the first character of the copy to be stored in memory. Press the COMMAND key followed by the MEM key, followed by two numerals (01-99). Position the cursor over th last character of the text to be stored and press the MEM key to close the memory segment.

Once the memory area has been defined and stored, the text stored will leave the screen. The stored information may be recalled at any time by pressing the MEM eky followed by the appropriate numerals. Copy will automatically be inserted to the left of the cursor position.

Storing Programmable Memory on the Job Diskette

All stored programmable memory segments may be written to a protected unused portion of the job diskette. To write your programmalbe memory segments to the diskette after they have been stored, press the FILE key followed by the WRITE key followed by the MEM key. The information is now stored in programmable memory and is saved on a portion of the diskette that cannot accidentally be erased.

Recalling Programmable Memory from the Job Diskette

The programmable memory segments previously written to the diskette may be recalled and stored to programmable memory by reading that segment of the diskette. Clear programmable memory (COMMAND, MEM, 00, WORD ERASE), then press the FILE key followed by the READ key followed by the MEM key. Programmable memory will be stored from the diskette.

SEARCH

That area of the text requireing a correction or change can be quickly and easily located using the search function. The search field is split into a maximum of 20 codes (plus optional replacement memory segment number) for search 1 and 8 codes for search 2. Normal search tag definition is via COMMAND, SEARCH 1 or 2 but if the 1 or 2 is not specified, the character after Command, Search is considered to be the first character in Search 1. The search area in the function field will begin "blinking". Keyboard the characters you wish to locate. If maximum keystrokes are entered, the search string will automatically close. If less tha maximum keystrokes are entered, press the SEARCH key to close the search field. Either or both search tags may be filled and searching is for both tags with Search 1 checked first. If an error is made while keyboarding the search string, press the single erase key to delete the unwanted character.

When the SEARCH key is pressed, the text buffer will be searched from the cursor position to the end of the text buffer. When an exact match is located, the cursor will position on the last character of the match.

In addition, discretionary hyphens, real hyphens, generated hyphens and carriage returns need not be specified in the search tag for a match to occur. This is to simplify searching for a hyphenated word when one is no longer sure what type of hyphen is in the text stream.

The message "S" will appear when no search match is found.

SEARCH AND REPLACE

You may search for a given area of text and automatically replace that information with a defined memory segment. To do this, first load the search string (COMMAND, SEARCH, 1 or 2, Characters to be located). Only 20-8 characters may be loaded. Press the MEM key followed by the appropriate numerals. (NOTE: If less than maximum characters were used in the search field, the memory segment definition will close the search field).

To activate a one time only search and replace, press the SEARCH key. The text buffer will be searched from the cursor location until an exact match has been located. The characters will automatically be replaced by those defined in the memory segment.

To search and replace a character combination that may appear several times within the text buffer, press the COMMAND key followed by the READ key. The entire text buffer will be search from the cursor location to the end of the text buffer. Each time the character combination loaded in the search string is found, it will automatically be replaced with the information in the defined memory segment.

NOTE: The defined memory segment may be loaded either before or after the search string has been loaded.

FILE DIRECTORY

Resident in the Edit/Scroll program is a file directory which may be viewed at any time without affecting copy in the text buffer.

To access the file directory press the COMMAND key followed by lower case "f". The first 62 characters of the first 8 files will appear on the screen. To view the first 62 characters of the next 8 files, press CURSOR RIGHT.

NOTE: The number of files displayed will be determined by the format of the diskette.

To view a particular file, Press the file letter. The first 500 keystrokes of the file will display on the screen. To view the next 500 keystrokes press CURSOR RIGHT.

To return to the text buffer, press RETURN. The cursor will position in the same location as before, and no copy will be lost from the buffer.

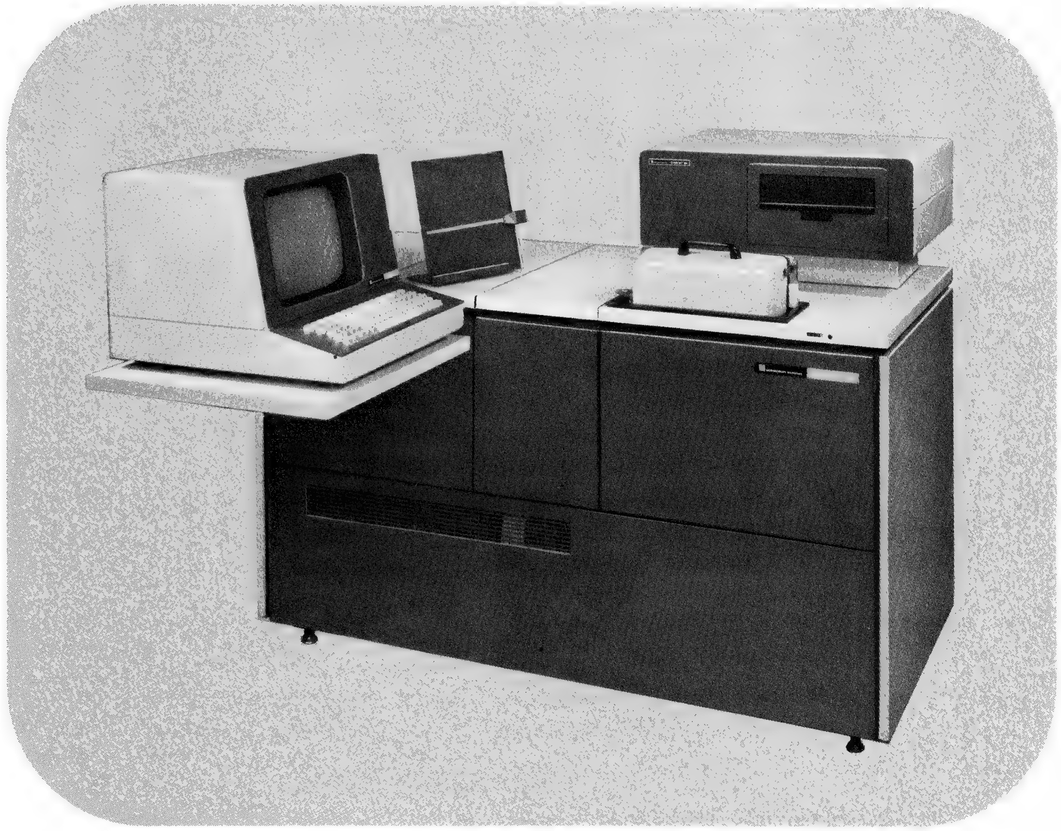
MEMORY DIRECTORY

Memory Directory is now available from memory. To access the Mem Dir. press COMMAND, MEMORY, MEMORY. The segment # will display, the total codes and the first 54 characters of that segment. Press MEMORY again to display the next 8 segments if available. Press RETURN to return to the text buffer display.

Comp/Set 3500 Series Phototypesetting Systems

504H
Record/Playback Module

operating instructions



Literature Kit No. 17-7915

March, 1977

Copyright 1977
VariTyper Division
Addressograph Multigraph
Corporation

table of contents

Page(s)

Introduction 3
  504 Description 3
  Keyboard Changes 3
  Function Field Changes 3

Diskettes 5
  Program Diskettes 5
  Job Diskettes 5
  Inserting a Diskette 6
  Removing a Diskette 6
  Handling Diskettes 6

Operating Instructions 7
  Loading the 504 Program Diskette 7
  Selecting a Format for Job Diskettes 7
  A Direct Entry Phototypesetter 7
  Turning the Typesetter off 8
  Recording—Writing 8
  Reading—Playing Back 8
  Making Corrections—Reading and Writing 8
  Slowing Down the Reading Process 9
  Searching 9
  Fast Search 10
  Reading—Playing Back 11
  Rejustification—Stripping 11
  Special Situations 13

Using the Tab/Data Option with Record/Playback . 15
  Rerunning Jobs with the Tab/Data Option 15
  Tab Suppress 15
  File Halt 16

Maintenance and Troubleshooting 17
  Erasing a File 17
  Erasing the Entire Diskette 17
  Opening the Wrong File 17

504 Utility Program 18
  Changing the Display Format Number 18
  Paging through the Diskette 18
  Examining a File 19

introduction

The 504 record/playback module allows you to record and save the characters you type on a Comp/Set phototypesetter. All the characters and functions are stored on a diskette and once created, you can replay the diskette for additional printouts of a job, or revise, update and store the job for future reference.

The 504 module is much more than a recording and playback mechanism. It is a complete software package that allows you to automatically search, correct, insert and rejustify text. It transforms your phototypesetter into a total keyboarding system with update and storage capabilities.

504 Description

The 504 record/playback option is modular in design and can be attached to all existing Comp/Set phototypesetters. It consists of a cabinet that sits on top of the phototypesetter with an opening for inserting a diskette. When the phototypesetter is turned on, the diskette drive automatically turns on and remains on until you turn your phototypesetter off.

A diskette fits into the horizontal slot and clicks into position. The door slides down easily and locks. The door must cover the slot while you're using a diskette.

To remove a diskette, press the horizontal bar below the door and the diskette will automatically eject.

Keyboard Changes

With the 504 record/playback option, additional keys are added to the Comp/Set keyboard.

The READ key initiates a printout cycle and displays a recorded job on the screen.

The SEARCH key defines the beginning of a unique character combination and instructs the phototypesetter to automatically look through the recorded job to find a match.

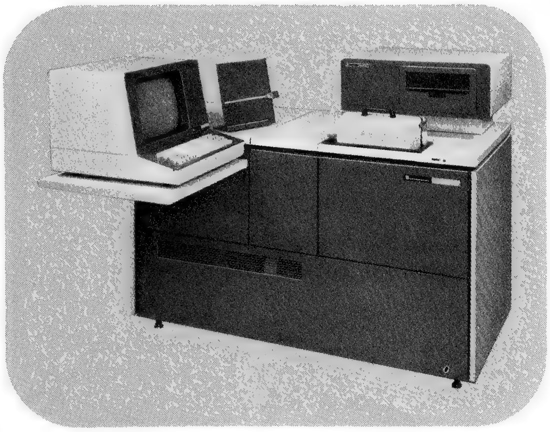
The DATA key is used with another Comp/Set option that you may or may not have. It defines and stores text and functions that are a part of repetitive jobs.

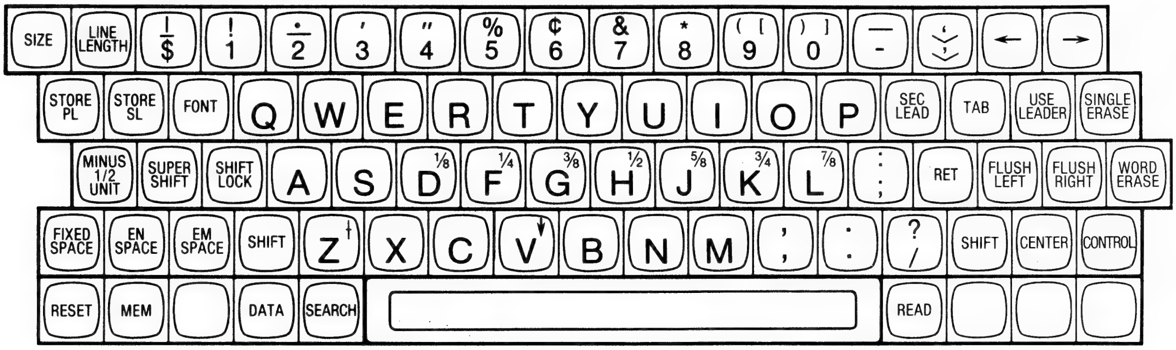
RESET and MEMORY are used to instruct the phototypesetter to load the 504 program.

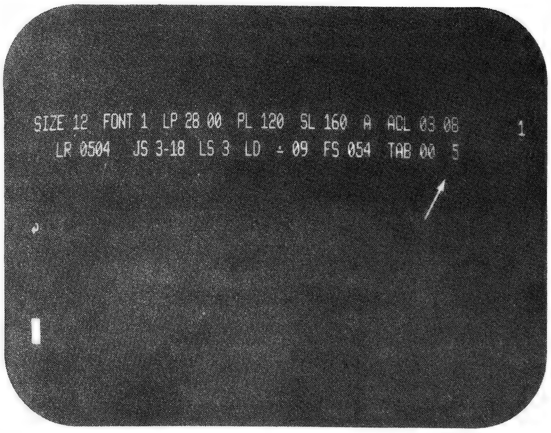
Function Field Changes

The function field incorporates three additional areas.

A SEARCH FIELD located on the bottom right side of the function field, displays up to five characters. Any time during a

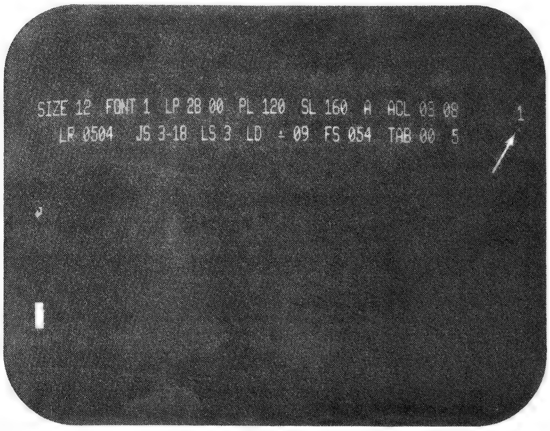



SIZE
LINE LENGTH
$
! 1
÷ 2
' 3
" 4
% 5
¢ 6
& 7
* 8
([9
)] 0
— -
←
→
STORE PL
STORE SL
FONT
Q
W
E
R
T
Y
U
I
O
P
SEC LEAD
TAB
USE LEADER
SINGLE ERASE
MINUS 1/2 UNIT
SUPER SHIFT
SHIFT LOCK
A
S
D ⅛
F ¼
G ⅜
H ½
J ⅝
K ¾
L ⅞
: ;
RET
FLUSH LEFT
FLUSH RIGHT
WORD ERASE
FIXED SPACE
EN SPACE
EM SPACE
SHIFT
Z †
X
C
V ↓
B
N
M
, ,
: .
? /
SHIFT
CENTER
CONTROL
RESET
MEM
DATA
SEARCH
READ



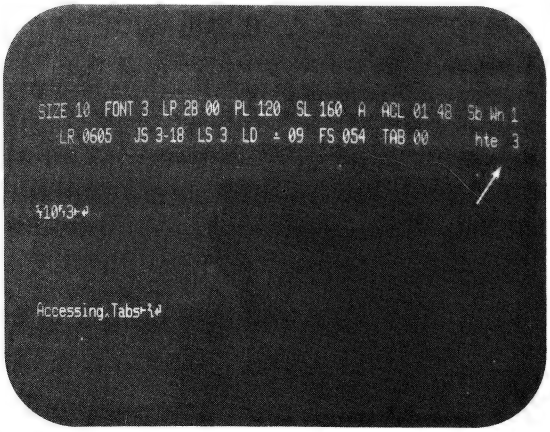
```
SIZE 12  FONT 1  LP 28 00  PL 120  SL 160  A  ACL 03 08      1
   LR 0504   JS 3-18  LS 3  LD  ± 09  FS 054  TAB 00  5
```

Operational Message



```
SIZE 12  FONT 1  LP 28 00  PL 120  SL 160  A  ACL 03 08      1
   LR 0504   JS 3-18  LS 3  LD  ± 09  FS 054  TAB 00  5
```

Format 1 verifies that you have 24 files on your diskette with 12,000 characters available in each file.



```
SIZE 10  FONT 3  LP 2B 00  PL 120  SL 160  A  ACL 01 48  Sb Wn 1
   LR 0605   JS 3-18  LS 3  LD  ± 09  FS 054  TAB 00      hte  3

§10§3↵

Accessing.Tabs→§↵
```

Storage indicators warn you that you are near the capacity of a file.

reading or editing operation, you can instruct the phototypesetter to look for a unique character combination by typing the characters into the search field. The phototypesetter will look through a job and stop at the next exact match. You can search for a particular function and change it, a particular word and correct or delete it, and then rejustify the copy to fit your margins.

Occasionally the lower right side of the function field (next to the TAB 00) will display a number or letter. These characters represent common keyboarding situations. For example, the number 5 indicates that there is no information stored in an area on the diskette.

A complete listing of these operational messages is located in the *Operator Aids* section of this manual.

RECORD/PLAYBACK identifiers located on the upper right side of the function field verify your operation. The following symbols display when you establish the corresponding mode.

R	The phototypesetter is reading a recorded job from the diskette.
S	The phototypesetter is searching for a particular character combination.
a to x	(next to R or S) These represent the different locations on the diskette where the reading or searching is taking place.
W	The phototypesetter is recording on the diskette.
a to x	(next to the W) This represents the different locations on the diskette where writing (or recording) is taking place.
‖	The two blinking bars verify that the typesetter is turned off.
|	One blinking bar next to the A (automatic) or M (manual) mode verifies that the stripping function is turned on.

Two other numbers verify the condition of the diskette:

1 to 4 This number in the extreme upper right of the function field verifies the number of storage areas, or files, you selected for a diskette.

1	24 files (a to x) with 12,000 characters each
2	12 files (a to l) with 24,000 characters each
3	6 files (a to f) with 48,000 characters each
4	2 files (a and b) with 144,000 characters each

4 to 0 One of these numbers displayed in the extreme lower right of the function field is a warning for you that you are near the end of a storage area, or file.

4	1000 characters are left
3	750 characters are left
2	500 characters are left
1	250 characters are left
0	. . . the storage area is full

Combinations of symbols often appear at one time. For example, Ra Wb verifies that you are reading information from file *a* and writing this information onto file *b*. Or, Sf Wl verifies that you are searching in file *f* and at the same time writing this information onto file *l*.

Diskettes

The A/M diskettes you use with your phototypesetter are flexible, magnetic discs enclosed in plastic jackets with openings.

The interior of the jacket is lined with a soft wiping material that cleans the diskette as you use it. There are two kinds of diskettes.

Program Diskettes

Program Diskettes are used to expand the phototypesetter's capabilities. You received two copies of a program diskette (one is a spare) with the 504 option. This program diskette conditions the phototypesetter to respond in a particular way as you keyboard jobs. You cannot record or play back this diskette.

Whenever you turn the phototypesetter on, load this program diskette before beginning anything.

Job Diskettes

Job Diskettes are used to record, play back and revise your typesetting projects.

You can store up to 288,000 characters on one diskette. That's approximately 230 double-spaced typewritten pages.

If you record a variety of different jobs, you can distribute these 288,000 characters into smaller storage areas by selecting a particular recording format for the diskette.

For example, if you have a number of small jobs, divide a diskette into twenty-four storage areas that each have 12,000 characters. This is format 1. The twenty-four storage areas in format 1 are assigned letters to distinguish one from another. Format 1 has storage areas, or files, lettered *a* to *x*.

FORMAT 1	FORMAT 2	FORMAT 3	FORMAT 4
Diskette is divided into 24 files with 12,000 characters in each file.	Diskette is divided into 12 files with 24,000 characters in each file	Diskette is divided into 6 files with 48,000 characters in each file	Diskette is divided into 2 files with 144,000 characters in each file

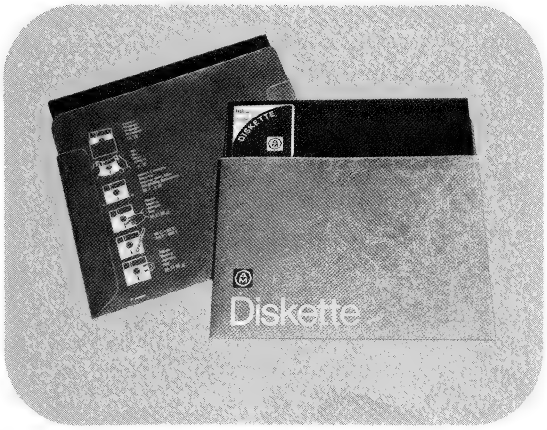
If you have longer jobs, divide a diskette into twelve storage areas, or files, that each have 24,000 characters. This is format 2 and its files are lettered *a* to *l*.

For even longer jobs, divide a diskette into six storage areas that each have 48,000 characters. This is format 3 and its files are lettered *a* to *f*.

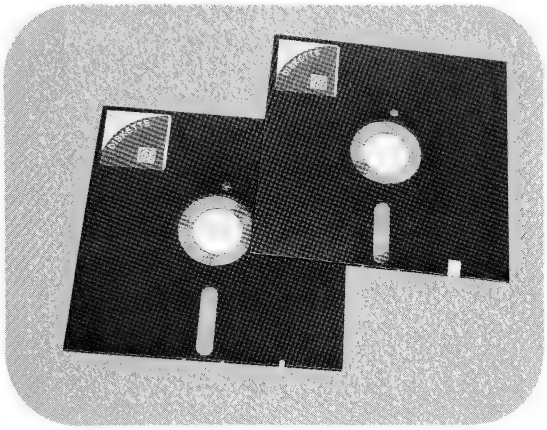
For the maximum storage, divide the diskette into two storage areas of 144,000 characters each. This is format 4 and its files are lettered *a* and *b*.

Whenever you insert a job diskette, always verify the

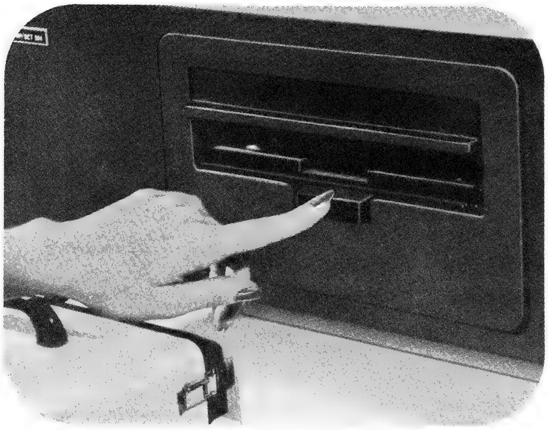
The program diskette has an orange label and has a plastic storage case.



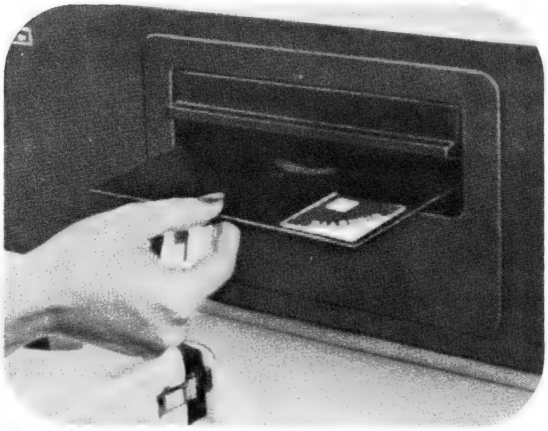
Job diskettes have their own jackets to protect the writing surface.



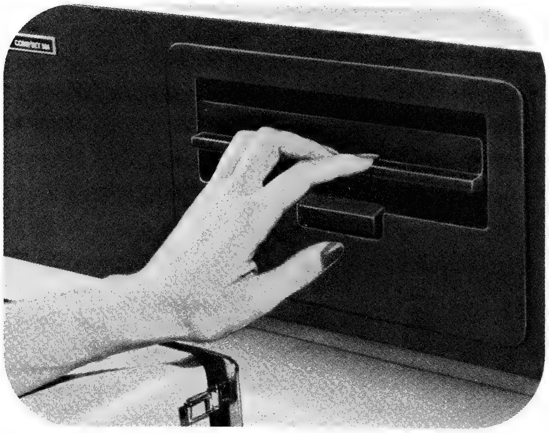
To write, or record on a diskette, be sure to cover the notch with tape.



Press horizontal bar.



Insert diskette.



Close door.

format of the diskette. You can have only one format for each diskette.

If you change the diskette format, be sure that there is nothing recorded on the diskette in the old format that you want saved.

Inserting a Diskette

To insert a diskette:

1. Open the diskette door by pressing the horizontal bar below it.
2. With the label side up and the notched edge facing into the slot, slide the diskette into the slot and gently push it until it clicks into position.
3. Slide the door down until it snaps shut.

Removing a Diskette

To remove a diskette:

1. Press the horizontal bar below the diskette door. The diskette ejects.

Handling Diskettes

The diskette can be reused indefinitely, but you should follow some precautions to guarantee its life.

Return the diskette to its storage envelope whenever it is removed from the phototypesetter.

Keep diskettes away from magnetic fields or materials that are easily magnetized (e.g., paper clips, metal copy stands, etc.). These strong magnetic fields can distort information recorded on the diskette.

Replace the storage envelopes when they become worn, cracked or distorted. The envelopes are designed to protect the diskette.

Always use a felt tipped pen to write on the plastic jacket or storage envelope. Never use pencil or ball-point pen.

Keep smoking materials as well as food or beverages away from the diskettes.

Keep diskettes away from direct heat or sunlight.

The diskette has its own cleaning surface on the inside of the jacket. Avoid touching or cleaning the diskette surface. Scratches on the diskette may cause loss of stored data.

When you order diskettes, they arrive with a supply of gummed tabs that cover the notched edge of the diskette. To record anything on the diskette, the tab must cover the notch on the diskette.

If the tab wears out, use an opaque, pressure sensitive label to cover the notch. Adhesive tapes, such as masking tape, are not recommended.

operating instructions

Loading the 504 Program Diskette

Whenever you turn your phototypesetter on, load the 504 program diskette before doing anything.

1. Insert the 504 program diskette and slide the door down until it snaps shut.
2. Fill in the function field.
3. Press **reset memory** to start the loading cycle. The small light below the diskette door comes on while the phototypesetter reads this initial conditioning, then it goes off.
4. *LP a-r* displays on the screen. Press the lower case *a* (~~or~~ y) and check that the red light on the diskette door is on. When the light goes off, *LP a-r* reappears. RESET MEM C (HYPHENATION)
5. ~~Press **cursor left** ← and **data**. The screen clears and the red light goes off. When the function field appears, remove the program diskette.~~

The 504 option is now conditioned for your typesetting operations.

Selecting a Format for Job Diskettes

1. Insert a job, or working, diskette.
2. Press **read**. The format number for that diskette displays in the upper right on the function field. The number 5 displays as an operational message and the phototypesetter beeps.
3. If the diskette format number is the one you want, begin your reading or writing operation.
4. If the diskette format number is not what you want, change it by pressing ~~**control b f**~~ and the format number you want, *1-4*. This new format number displays in the upper right on the function field.

Notes:

New diskettes display format two when you first insert them in the phototypesetter. Change this format number to whatever format number you need.

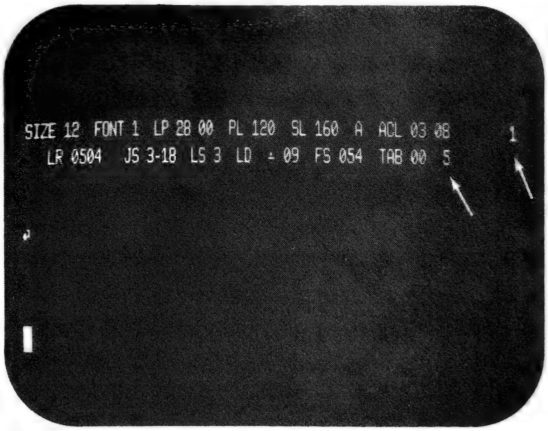
Don't change diskette format numbers if you already have information stored using a particular format number.

You can use a Comp/Set phototypesetter with the 504 record/playback option in several different ways.

- Use it as a typesetter and record the text and functions while you keyboard.
- Use it to update a recorded job while you typeset it.
- Use it to search through a recorded job without typesetting it.
- Use it as a direct entry phototypesetter without recording anything.

A Direct Entry Phototypesetter

When you turn the phototypesetter on, you can fill in the function field and begin keyboarding and typesetting without recording anything on a diskette. Any time you turn the phototypesetter on, or finish an operation using diskettes, you can use the typesetter alone.



```
SIZE 12  FONT 1  LP 28 00  PL 120  SL 160  A  ACL 03 08       1
   LR 0504   JS 3-18  LS 3  LD  ± 09  FS 054  TAB 00  5
```

Change the diskette format to the one that suits your needs.

Turning the Typesetter Off

You might want to record a job on a diskette before typesetting it, or correct a recorded job before typesetting it.

To turn the typesetter off, press **control t**. Two blinking vertical bars display on the upper right side of the function field verifying that the typesetter is turned off.

To turn the typesetter back on, press **control t** again.

Turning the typesetter off and then on later is especially helpful when only a portion of a recorded job needs updating or typesetting.

Recording—Writing

As you keyboard a job, you can also record the characters and functions and store them on a diskette. In this case, you may or may not want the typesetter on, but you definitely want to activate the 504 option.

To record, or write, on a diskette:

1. Load the program diskette, if necessary.
2. Insert your job diskette.
3. Press **read**. The diskette format number displays in the upper right on the function field. Change the format number if necessary by pressing ~~**control b**~~ **f** *1-4*.
4. Press FILE WRITE ~~**control b w**~~ and a letter *(a-x)* to define which storage area you want to write in. The letter displays in the upper right side of the function field verifying that this storage area, or file, is ready.
5. Keyboard the job. (Notice that your line length remainder automatically counts down as you keyboard.)
6. Instruct the phototypesetter to close that storage area, by pressing FILE WRITE ~~**control b w**~~ **single erase**.
7. Begin writing in another storage area by pressing FILE WRITE ~~**control b w**~~ and another letter *(a-x)*, or
8. Use the phototypesetter to read another file or set type without recording, or
9. Remove the diskette by pressing the horizontal bar below the diskette door.

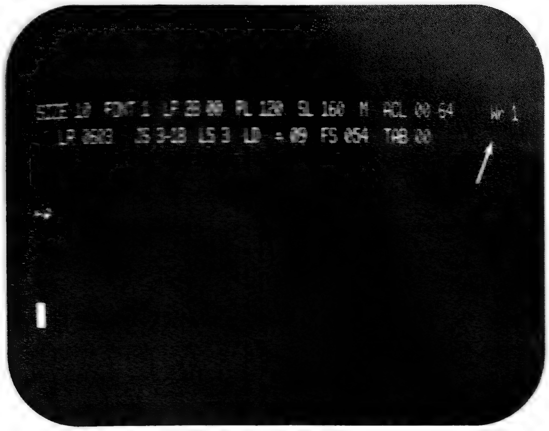
Making Corrections—Reading and Writing

You can read one recorded storage area on the diskette and at the same time record it in another area. You can stop reading at any point, make corrections, insert new copy or functions, then continue reading and writing. If just a draft copy is needed, you can instruct the phototypesetter to print at a faster, proofing speed. The original recording never changes, but the new recording includes the original good copy, plus all the new additions. You can never accidentally read and write in the same file.

Whether you need a proof copy, or an edited final copy, you can also use automatic search to quickly locate a particular error or correction point. Two extra keys on the keyboard help make revisions faster—**Read** and **Search**.

To read from one storage area and write into another:

1. If necessary, load the program diskette, then remove it and insert your job, or working diskette.



Control b w r defines file “r”.

2. Press **read**. The diskette format number displays in the upper right side of the function field.
3. Press ~~**control b**~~ FILE **read** and the *letter* of the storage area you want to read. This letter displays in the upper right on the function field.

At this point, your original recording is ready. Now set up a storage area to write, or record, this updated job.

1. Press ~~**control w**~~ FILE WRITE and the *letter* of a new storage area. This letter also displays in the upper right side of the function field next to the letter of your original recording.

Now your original recording is ready to begin reading and your new storage area is ready to begin writing.

To begin the read/write operation:

1. If you want the typesetter to print a faster, proofing copy, press **control q**. A Q displays below the FONT indication in the function field.

   If you use the **control q**, your copy might not meet quality typesetting standards, but it will be acceptable for a proofing copy. The typesetter prints at 70 lines per minute in this proof mode.

   To cancel the proof mode, press **control q** again.
2. Press **read**. The copy from the original recording displays on the screen and is recorded in the new storage area at the same time.

To temporarily stop reading:

1. Press **read**. Make any corrections or additions.

To resume reading:

1. Press **read** again.

Slowing Down the Reading Process

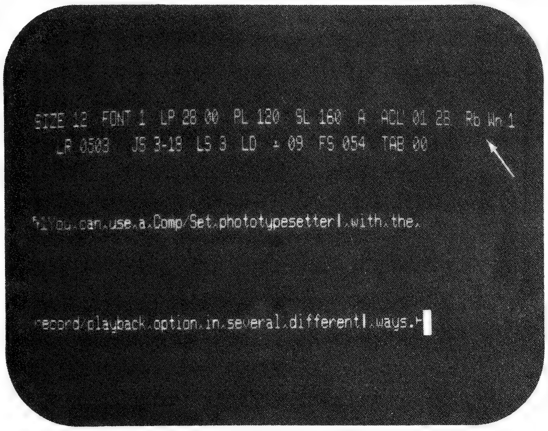
Because the phototypesettr reads so quickly, using the READ key to start and stop doesn't always position copy correctly on the screen for you to make corrections. To slow reading to a character at a time:

1. Press **read** to begin reading.
2. Press **cursor right →**. Reading stops at the next non-function character.
3. Press **cursor right→** again. Each time the cursor right key is pressed, the next recorded character displays.
4. When you reach a correction point (either a typo, insert, or deletion), press **read**. This stops reading and the *R* in the function field goes off.
5. Make the correction, then resume reading by pressing **read** again, or pressing **read** then **cursor right →** .

Searching

In many instances, you may not want to monitor reading a job as you make corrections. If you know where the errors or changes should take place, the 504 option has an automatic search capability that helps you locate particular points in the copy.

A SEARCH FIELD displays in the lower right side of the



```
SIZE 12  FONT 1  LP 28 00  PL 120  SL 160  A  ACL 01 28  Rb Wn 1
  LR 0503  JS 3-19  LS 3  LD + 09  FS 054  TAB 00

You.can.use.a.Comp/Set.phototypesetter|.with.the.

record/playback.option.in.several.different|.ways.H
```

Reading file "b" and writing in file "n".

function field and has room for five characters. You can change these five characters any time during a reading operation.

To search for a particular character combination while you're updating a recorded job:

1. Set up your phototypesetter to read and write.
   Press FILE ~~**control b**~~ **read** and the *letter* of the storage area on the diskette you want to read from.
   Press FILE WRITE ~~**control b w**~~ and the *letter* of the storage area on the diskette you want to write onto.
   Press **control search**. The search field in the lower right side of the function field clears if anything was there.
2. Type up to five characters. These characters display in the lower right of the function field. Once five characters are typed a prolonged beep sounds indicating that the search field automatically closed. (If your search field has fewer than five characters, you must close it by pressing **search** again.)
3. Press **search**. The phototypesetter begins to search through the recorded job as it displays on the screen and at the same time looks for a match that the search field defines. An *S* displays in the function field to verify that you ar searching. The *S* goes off once a match is found.
4. At the first match, the searching stops. The *S* on the function field goes off and the keyboard is free to make any changes, inserts, or deletions.
   The characters in the search field, however, remain in the field until you change them by pressing **control search**, type the next search characters and press **search** or clear the search field by pressing **control search search**.
5. To search to the next defined position, press **control search** and type the next unique five-character combination, then press **search** to begin the next search operation.

You can move from reading to searching or searching to reading as you update a tape. If you're searching for digits, be sure the search field is unique enought that the searching doesn't stop in the middle of a function or command digit.

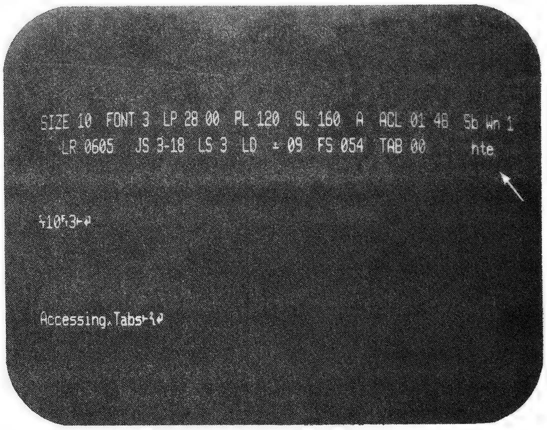
If you accidentally press **search** and begin a searching operation you can stop searching by pressing **read** or **cursor right** → followed by **read**. This stops the searching operation and you can begin again.

Fast Search

If only a portion of a file needs to be typeset or rewritten, you can set up a fast search operation by turning the typesetter off and searching.

To do this:

1. Turn the typesetter off by pressing **control t**. Two



```
SIZE 10  FONT 3  LP 28 00  PL 120  SL 160  A  ACL 01 48  Sb Wn 1
  LR 0605  JS 3-18  LS 3  LD ± 09  FS 054  TAB 00      hte

⅟10⅟3⊢⇙

Accessing.Tabs⊢⅟⇙
```

Loading the search field—control search, then type the characters (search).

blinking bars in the upper right side of the function field verify that the typesetter is off.

2. The write indicator should be off. If necessary press **control l** to stop writing or ~~**control b w single erase**~~ to close a displayed write file.
3. Load the search field with a match that will stop just before the section of the job that you want to typeset.

   Press **control search**. Type the characters in the search field. If the search field is less than five characters, press **search** again to close the field.
4. If you aren't already reading a file, select the file you want to search by pressing FILE ~~**control b**~~ **read** and the *letter* of the file.
5. Press **search**. The file reads at maximum speed. Copy does not appear on the screen until the match is found and you turn the typesetter or write indicator on.
6. When the searching stops, turn the typesetter on by pressing **control t**. The blinking bars disappear. Resume normal operations.
7. Press **read** to call copy onto the screen.

FILE WRITE SINGLE ERASE

Reading—Playing Back

You can play back a recorded job and read the copy and functions stored with the job.

You can do this with the typesetter off, if you just want to see what's on the diskette.

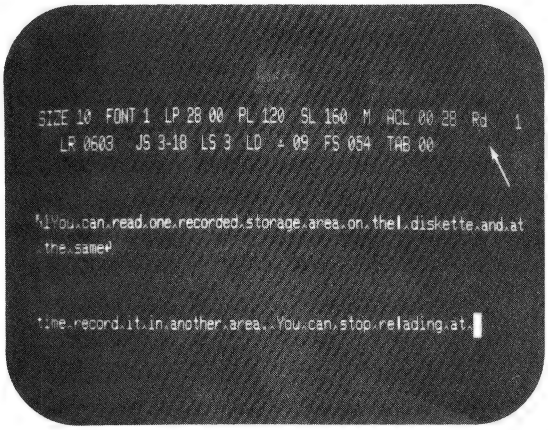
Or you can read a recorded job with the typesetter on. This might be good if you only have a few minor changes and don't need to save the recording.

In either case, to read a recorded diskette:

1. Load the program diskette if necessary. Remove this diskette and insert the job diskette you want to read.
2. Press **read**. The diskette format number displays in the upper right on the function field. You should not change the format number to read the job.
3. Press FILE ~~**control b**~~ **read** and a letter *(a-x)* to define the storage area, or file you want to read. The letter displays in the upper right side of the function field verifying that this storage area is ready.
4. Press **read** to begin reading.
5. To temporarily stop reading, press **read**.
6. To resume reading, press **read** again.
7. When you're finished reading a recorded job, the reading cycle automatically stops. If you're in the middle of a reading file and if you want to close the reading operation, press **read** to stop reading, then press **control b read y**. The *R* and file letter in the function field go off.

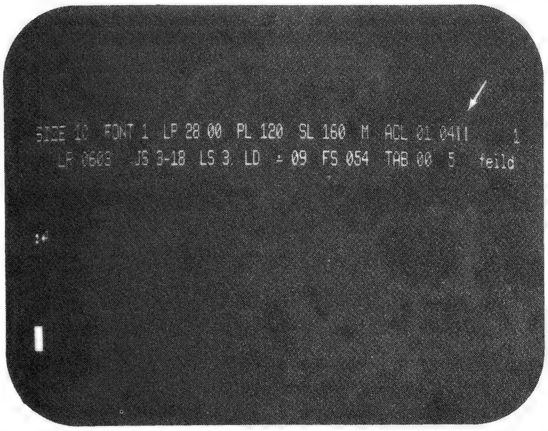
Rejustification—Stripping

The Comp/Set phototypesetter with the record/playback option will rejustify a recorded job when changes or corrections are made. It will even strip returns with end-of-line hyphens (hyphen return) when those line endings change as a result of rejustification.



```
SIZE 10  FONT 1  LP 28 00  PL 120  SL 160  M  ACL 00 28  Rd   1
   LR 0603  JS 3-18  LS 3  LD ÷ 09  FS 054  TAB 00

You.can.read.one.recorded.storage.area.on.the.diskette.and.at
.the.same

time.record.it.in.another.area..You.can.stop.relading.at.
```

control b read d opens file "d" to read it. Pressing read begins the reading cycle.



```
SIZE 10  FONT 1  LP 28 00  PL 120  SL 160  M  ACL 01 04||    1
   LR 0603  JS 3-18  LS 3  LD ÷ 09  FS 054  TAB 00  5  feild
```

Fast search with the typesetter and write indicators off.

A file originally recorded in the automatic mode contains the same codes as a file originally recorded in the manual mode (except for the control *A* or *M* codes).

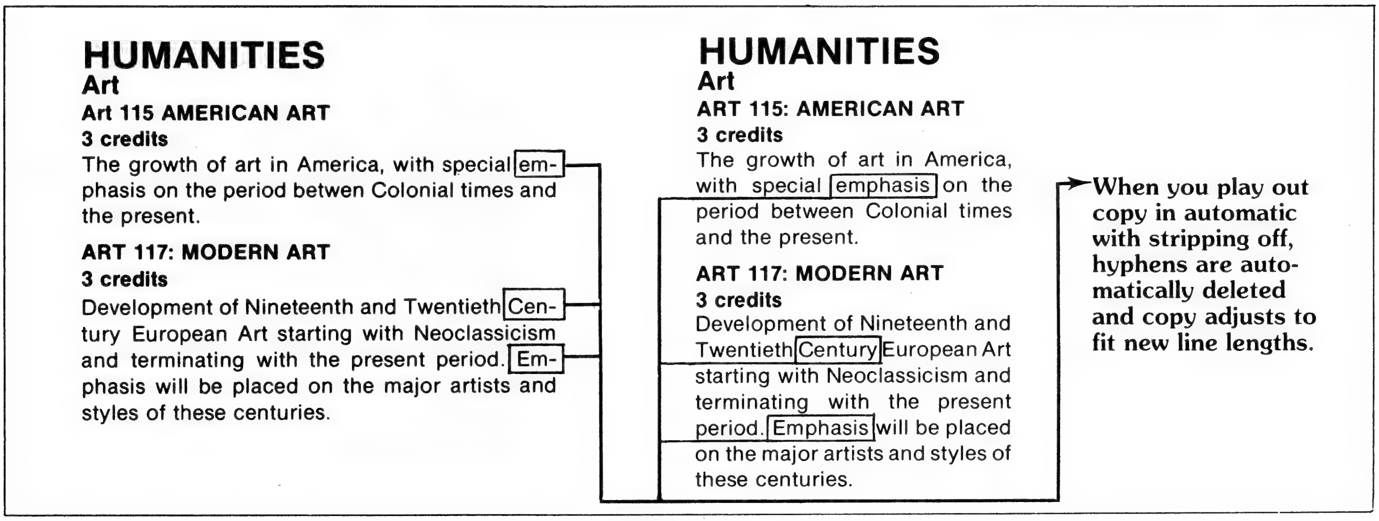
The mode the phototypesetter is in when you rerun a job is very important. It determines the amount of your intervention and in some cases it affects your desired output.

To aid you when rejustifying copy, utilize the stripping function. This function operates in the automatic or manual mode, but only affects copy being read onto the screen from the diskette. The stripping function has no affect on copy being keyboarded.

The stripping function is accessed by pressing **control word erase**. A single flashing vertical bar appears next to the auto or manual mode in the function field verifying that the stripping function is on. To turn the stripping function off, press **control word erase**.

As copy is edited and new line ending decisions need to be made, run the diskette with the stripping function ON. With the stripping function ON, return codes are changed to justifying spaces allowing the copy to rejustify. All returns are changed to justifying spaces except when:

1. Lines contain a **flush left, flush right, center,** or **use leader** command. Returns at the end of these lines always remain as return codes.
2. The line contains an **em-dash/return**. The return code is deleted and the em-dash remains. (If the em-dash/return occurs at the end of a line and justification can be accomplished, the return is used.)
3. The line ends with a **hyphen/return**. The return is deleted, but the hyphen remains and the reading stops. This allows you to determine if the hyphen should remain (e.g., for a compound word) or if the hyphen can be erased. If the hyphen should remain, simply press **search** or **read** to activate your reading operation. If the hyphen should be removed, press **single erase** followed by **search** or **read**.



HUMANITIES
Art
Art 115 AMERICAN ART
3 credits
The growth of art in America, with special em-
phasis on the period betwen Colonial times and
the present.
ART 117: MODERN ART
3 credits
Development of Nineteenth and Twentieth Cen-
tury European Art starting with Neoclassicism
and terminating with the present period. Em-
phasis will be placed on the major artists and
styles of these centuries.

HUMANITIES
Art
ART 115: AMERICAN ART
3 credits
The growth of art in America,
with special emphasis on the
period between Colonial times
and the present.
ART 117: MODERN ART
3 credits
Development of Nineteenth and
Twentieth Century European Art
starting with Neoclassicism and
terminating with the present
period. Emphasis will be placed
on the major artists and styles of
these centuries.

When you play out copy in automatic with stripping off, hyphens are automatically deleted and copy adjusts to fit new line lengths.

With the stripping function ON, the above rules are the same whether the phototypesetter is in automatic or manual mode. The only difference between the modes is that in manual mode, you must make every end-of-line decision, although returns are changed to justifying spaces. The automatic mode also stops on words that overset and require a hyphenation decision. With the stripping function ON, both modes will stop at hyphen/return codes for your decision on the hyphen. (This is true of justified copy and automatic ragged copy containing two flush or center commands at the beginning of paragraphs.)

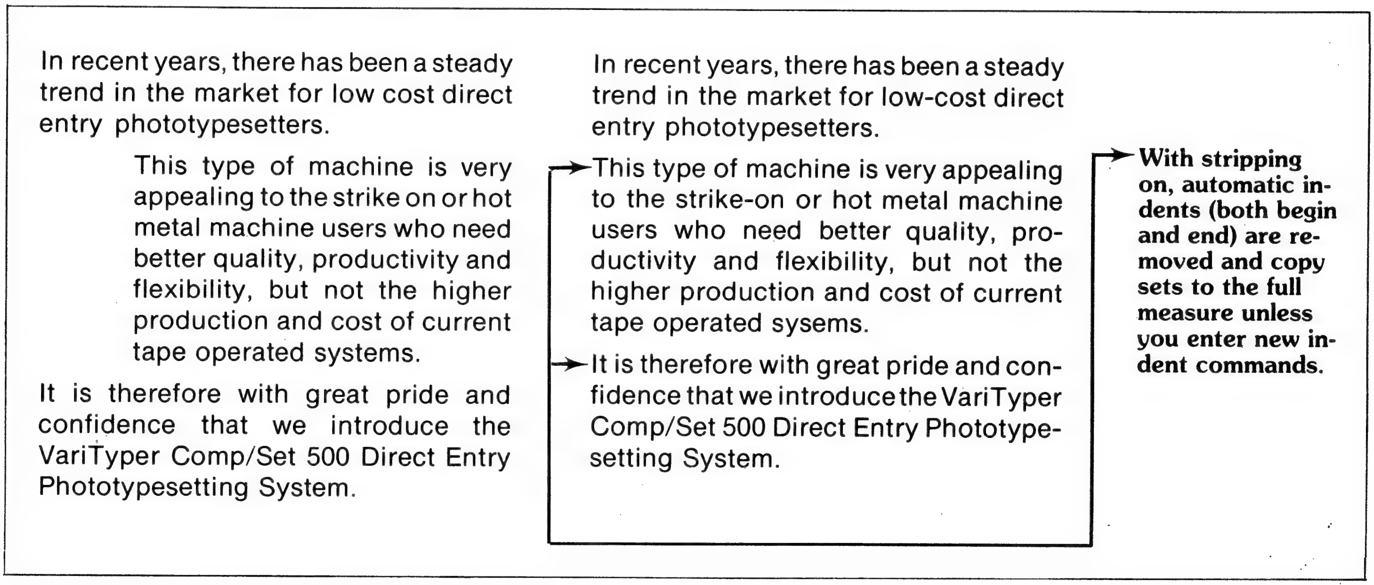
Remember, whenever a word oversets and you erase copy to make an end-of-line decision, rekeyboard the erased copy on the next line after the return before reactivating a reading operation.

Special Situations

The following situations require special attention:

1. If you want all hyphen/returns removed without your intervention, use the automatic mode with the stripping function OFF. The phototypesetter will not stop at a hyphen/return, but instead will delete these codes. This is useful when rejustifying copy where the hyphen/return is not in a compound word.
2. If you rerun a file with editing changes that don't require new line endings, run the file with the function field in manual mode and the stripping function OFF. In this situation all return codes remain as return codes and the copy reads and transfers without your intervention.

   (It is a good practice *not to* record an automatic or manual mode in a file. Before turning on a writing operation, select the mode and follow it with two returns and then activate writing).
3. Copy containing automatic indents *(control, flush or center,* and *four digits)*, must be rerun with the stripping function ON when the copy needs to be rejustified. *The stripping function automatically removes*



In recent years, there has been a steady trend in the market for low cost direct entry phototypesetters.

This type of machine is very appealing to the strike on or hot metal machine users who need better quality, productivity and flexibility, but not the higher production and cost of current tape operated systems.

It is therefore with great pride and confidence that we introduce the VariTyper Comp/Set 500 Direct Entry Phototypesetting System.

In recent years, there has been a steady trend in the market for low-cost direct entry phototypesetters.

This type of machine is very appealing to the strike-on or hot metal machine users who need better quality, productivity and flexibility, but not the higher production and cost of current tape operated sysems.

It is therefore with great pride and confidence that we introduce the VariTyper Comp/Set 500 Direct Entry Phototypesetting System.

With stripping on, automatic indents (both begin and end) are removed and copy sets to the full measure unless you enter new indent commands.

the indent commands (both open and close) allowing the copy to rejustify to the full measure. Rekeyboard the indent commands (both open and close) at the proper locations.

4. You can search for returns to delete lines. The return must be the last symbol entered in the search field. When located, the typesetter automatically deletes the return and stops reading. You can delete the line or make whatever editing change is needed. If the typesetter stops on the wrong return, simply continue searching by entering a return code, then pressing **search**.

   If the stripping function is ON, the typesetter will not stop at returns unless they contain a flush or center command, a use leader command, or words that end with a hyphen or em-dash/return.

5. There is no limitation to the number of different fixed space values that you can use and record in a line or tab column. When you reread a job with fixed spaces, the fixed space values will read exactly as they were originally recorded.

6. The add lead sequence **control v** is recorded without a value. When you replay the recorded job, the primary or secondary leading value in the function field is advanced whenever a *control v* is read.

using the tab/data option with record/playback

If the Comp/Set phototypesetter you're using has the tab/data option, you have up to 99 tab and data memories that make recording and editing columnar work easier.

By using the tab and data memories while you record a file, you can edit and correct the file without restoring the memories. You can even record the tab and data memories in a separate memory file for jobs that use the same format.

Rerunning Jobs with the Tab/Data Option

If you stored tab memories and then recorded a job file, every time you press **tab** the information stored in that memory displays on the screen and records in your file.

If you need to revise the job, all the information for each tab is recorded in the file. When you read that file back to create an updated file:

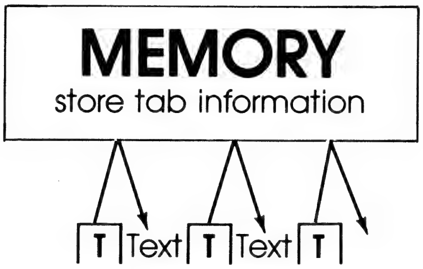
1. Set up the phototypesetter to read and write.
   Press FILE **~~control b~~ read** and the letter of the storage area on the diskette you want to read from.
   Press FILE WRITE **~~control b w~~** and the letter of the storage area on the diskette you want to write onto.
2. Clear the tab/data memory areas by pressing **control tab 00 word erase**, or index to an unused tab location. If you don't clear the memory or index beyond it, your new file will record the tab information twice—once from memory and once from your original file.
3. Be sure your file was recorded in the manual mode. If it wasn't, press **control m**.
4. Make revisions or corrections to the job as necessary.

Tab Suppress

Some tab jobs are updated on a regular basis. These jobs use the same format every time the job is updated and often have large portions of the job that are unchanging.

You could store the tab memory and rekeyboard the job every time the job is updated. Or, you could revise the job by searching through the file.

There is another way to store the job that makes future revisions easier.



First, store the tab memory. At the same time you're storing the memory, record a file that has this tab memory information. Then record the job file using the tab suppress instruction.

Tab suppress is a kind of switch code. When you use this feature to record a job, every time you press **tab**, you're telling the phototypesetter to switch to the next tab memory and use that information for that column. Each time you press **tab** the phototypesetter moves to the next tab memory. The information stored in each tab displays as you call out the tabs. Your job file, however, only records the tab and the text you type.

To record a file with your tab memories:

1. Mark up the tab job using a Comp/Set layout form.
2. Set up the function field and put the typesetter in the manual mode.
3. Press **control tab 00 word erase** to clear any other information that might be stored in the tab memory.
4. Open a file to begin writing.
5. Press **control tab 01** and store the information for the first tab. Follow this with a **tab**.
6. Press **control tab 02** and type the information for the second tab followed by a **tab**.
7. Continue storing the tab memories until the last tab, then press **return** and close the file.

To record the job file using tab suppress:

1. Be sure the tab memory is stored in the phototypesetter.

   You can type this information each time you need it, or just read in the tab memory file.
2. Open a file to begin writing in it.
3. Press **control c tab**. The tab symbol displays in the function field next to TAB. Press **control c tab** to stop the suppress.
4. Type the job. Only the tab and the text you type are recorded in the file. Nothing is recorded from memory.

Whenever this file needs updating, either store the memory again or read in the memory file. Then just search through your job file. Because your job file only has the text and the tab instruction, it's much easier to search for a correction point.

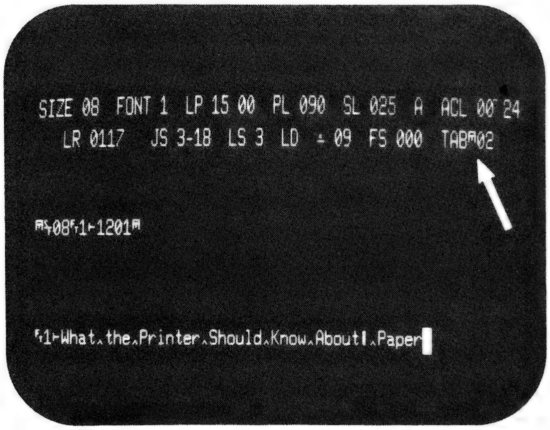
If you use tab suppress, you must use it throughout the entire job. You can't use it for a portion of the job. If you update the job, however, you can read in your memory file, and then create an updated file without using tab suppress.

Tab suppress is especially good for parts listings, or price sheets or when you're using an off-line keyboard.

File Halt

A HALT command, **control h**, recorded in a file instructs the phototypesetter to stop when the file is reread. This is useful when you want to change a type disc in the middle of a job. When you use a halt code:

1. Always precede a **control h** with a character or fixed space. A *halt* cannot be the first character on a line.
2. Enter only one **control h** per line. If you enter more than one, only the last one records on your diskette.
3. When reading stops at your **control h**, the *R* goes off on the function field. If you want to keep the *halt* command in the updated file, reenter the **control h** and resume your reading operation.



```
SIZE 08  FONT 1  LP 15 00  PL 090  SL 025  A  ACL 00 24
   LR 0117   JS 3-18  LS 3  LD ± 09  FS 000  TAB⊢02


ᴿ⊢08ᶠ1⊢1201ᴿ



ᶠ1⊢What‸the‸Printer‸Should‸Know‸About‸Paper█
```

When you use tab suppress, the tab symbol displays next to the counter.

Erasing A File

When you update recorded files, both the original and updated job are stored on your diskette. If you only want to save the updated file, erase the original file.

1. Open the original file to write in it by pressing **control b w** and the file letter.
2. Close the file by pressing **control b w single erase**.

Another way to erase a file:

1. Open the original file to write in it by pressing **control b w** and the file letter.
2. Press **control b word erase** and the file letter.

Erasing the Entire Diskette

It's unlikely that you'll ever need to erase the entire diskette, but if for security reasons you feel it necessary, to erase the entire diskette:

1. Press **control b w z**.
2. Press **control b word erase z**.

Opening the Wrong Write File

There might be a time when you'll open a write file (**control b w** and a file letter) and realize that you didn't want to record anything new in that file. The information in that file could be a job that you need to save. To save this information, eject the diskette and begin again. Do not close the write file. If you do, you erase the file. Reinsert the job diskette and press **read** to verify the diskette format. Open the correct write file and begin your operation again.

maintenance and troubleshooting

504 utility program

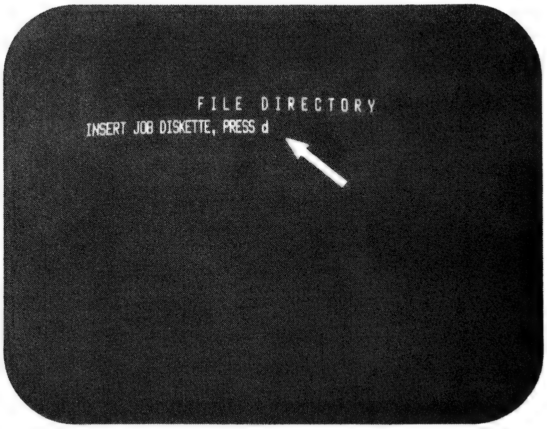
Because the floppy diskette is a magnetic medium, verifying exactly what and where you keyboarded functions and text for a particular job is sometimes difficult.

Your program diskette has a special utility that allows you to check exactly what was recorded in each file on your diskette. This utility is extremely helpful if you want to check an entire job diskette or just one file on the diskette.

To load the utility:

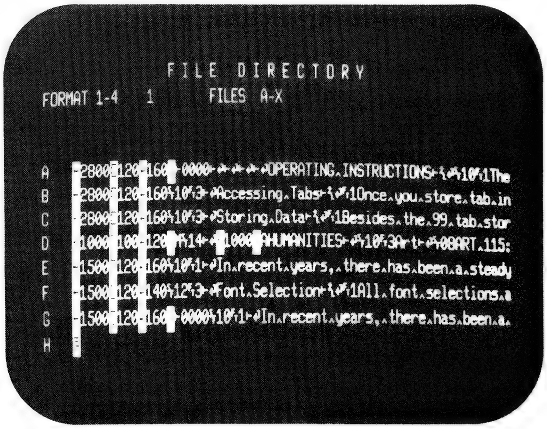
1. Insert your program diskette.
2. Press **reset memory**—*LP a-r* displays on the screen.
3. Press **i** or **r**.
4. When *LP a-r* displays again, press **reset data** and the function field displays.
5. Fill in the five basic functions (size, line length, font, primary and secondary leading). You don't need to add a **flush left return** after typing these functions.

   (If you type **flush left return** after the function field instructions, you don't cause a problem. The directory displays your job files in a slightly different sequence.)
6. Press **search**.
7. The directory heading displays. Insert your job diskette and press **d**.



```
FILE DIRECTORY
INSERT JOB DISKETTE, PRESS d
```

Once you load the utility, the screen tells you what to do next.



```
                FILE DIRECTORY
FORMAT 1-4   1        FILES  A-X

A   ▌2800▌120▌160▌0000→→→→OPERATING.INSTRUCTIONS→1The
B   ▌2800▌120▌160%10%3→Accessing.Tabs→1Once.you.store.tab.in
C   ▌2800▌120▌160%10%3→Storing.Data→1Besides.the.99.tab.stor
D   ▌1000▌100▌120▌%14→▌1000▌HUMANITIES→%10%3Art→%08ART.115:
E   ▌1500▌120▌160%10%1→In.recent.years,.there.has.been.a.steady
F   ▌1500▌120▌140%12%3→Font.Selection→1All.font.selections.a
G   ▌1500▌120▌160▌0000%10%1→In.recent.years,.there.has.been.a.
H   ▌
```

When you insert your job diskette and press d, the screen automatically fills with the first lines of files a-h.

Paging Through the Diskette

The screen fills with the first characters of a block of files according to the format of the diskette.

To advance through to the next block of files, press **cursor right ➤**. The screen clears then displays the first character of the next block of files.

If your diskette is in format 1:

Files a-h display first. Press **cursor right ➤** and files i-p display. Press **cursor right ➤** again and files q-x display. Press **cursor right ➤** again and files a-h display again.

If your diskette is in format 2:

Files a-h display first. Press **cursor right ➤** and files i-l display. Press **cursor right ➤** again and files a-h display.

If your diskette is in format 3:

Files a-f display first. Press **cursor right ➤** and files a-f display again.

If your diskette is in format 4:

Files a-b display first. Press **cursor right ➤** and files a-b display again.

Examining a File

To look at the information recorded in a file, type the file letter. (use the lower case) The screen clears and then displays the first 500 characters of the file you selected. The upper right side of the function field displays the file you selected.

To page through the file, press **cursor right ➤**. The screen clears then displays the next 500 characters of that file. Every time you press **cursor right ➤** the screen clears, then displays the next 500 characters. When you reach the end of the file, the next time you press **cursor right** → the screen moves to the beginning of the next file and displays the first 500 characters of that file.

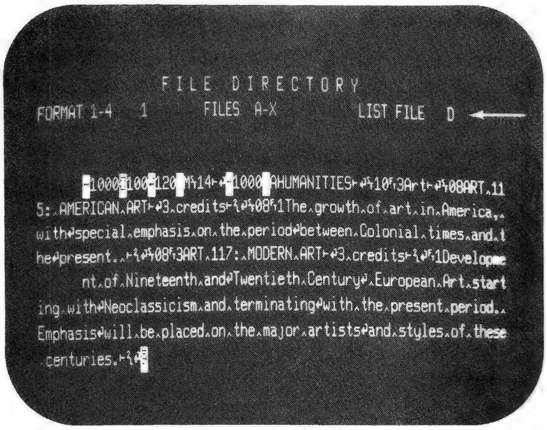
All functions (including line length values, leading, indents) display as well as the text.

Note: Pressing **cursor right** → advances the next 500 characters. You can not "scroll" through the file. Every time you press **cursor right** → you move to the next 500 characters.

To look at another file, type the file letter. The first 500 characters of that file display.

To return to the file listings, press **return**. The screen clears then displays the first characters of the first files on the diskette.

When you're finished checking the diskette, eject it. The screen clears and just the Directory title remains. Press **reset data** to call the function field back onto the screen. Fill in the function field then load the 504 program and begin your next operation.



```
                    F I L E   D I R E C T O R Y
FORMAT 1-4    1          FILES  A-X            LIST FILE  D ←——

     █1000█100█120█M↰14⊢↵█1000█AHUMANITIES⊢↵↰10↰3Art⊢↵↰08ART‸11
5:‸AMERICAN‸ART⊢↵3‸credits⊢↵↰08↰1The‸growth‸of‸art‸in‸America,‸
with↵special‸emphasis‸on‸the‸period↵between‸Colonial‸times‸and‸t
he↵present.‸⊢↵↰08↰3ART‸117:‸MODERN‸ART⊢↵3‸credits⊢↵↰1Developme
     nt‸of‸Nineteenth‸and↵Twentieth‸Century↵‸European‸Art‸start
ing‸with↵Neoclassicism‸and‸terminating↵with‸the‸present‸period.‸
Emphasis↵will‸be‸placed‸on‸the‸major‸artists↵and‸styles‸of‸these
‸centuries.⊢↵█
```

When you examine a file, the file letter displays in the upper right corner of the function field. 500 characters of the file display at a time.

CONTROL FUNCTIONS—Diskette (504H)

Function: **Control key = ©**

Loading 504 program
1. Insert program diskette ....Reset Mem
2. Visual *"LP a-r"* on screen
3. Press character "a or j" .. program loads
4. Press **cursor-left data**, remove program diskette
5. 504 is ready for job diskette...

Insert job diskette
press READ for format #

Changing diskette format # ....© b f #
1 = 24 files x 12,000 codes (a - x file letters)
2 = 12 files x 24,000 codes (a - l file letters)
3 = 6 files x 48,000 codes (a - f file letters)
4 = 2 files x 144,000 codes (a - b file letters)

Open READ files ....FILE ~~© b~~ READ file letter
press READ to start...
Close READ file ....© b READ WRITE

Open WRITE file ....~~© b w~~ file WRITE letter
To suspend writing..........................~~© l (el)~~ WRITE

Close WRITE file ....FILE WRITE ~~© b w~~ single erase

ERASE FILE ....© ~~b w file letter~~
~~© b WORD ERASE file letter~~

ERASE ENTIRE DISKETTE....................~~© b w z~~
~~© b WORD ERASE z~~

READ & WRITE
Open read file ....FILE ~~© b~~ READ file letter
Open write file...................FILE WRITE ~~© b w file~~ letter
To start writing to a file from another file ....READ
To suspend writing, press © l (el)

HIGH SPEED SEARCH
Turn typesetting off ....© t
Load search field (max. 5 characters)........© SEARCH (characters) SEARCH
Open read file ....FILE ~~© b~~ READ file letter
Press SEARCH...

OPERATIONAL MESSAGES **MSG.**

Overset......................................1
Tab/Data storage overflowed...................2
Tab/Data storage not stored 3
Invalid keyboard command.....................4
File not open or empty 5
Overflowing or exceeding a file(*) 6
*End of file indicators (4—3—2—1—0)
4—1000 keystrokes before end-of-file
3— 750 keystrokes before end-of-file
2— 500 keystrokes before end-of-file
1— 250 keystrokes before end-of-file
0—END-OF-FILE...file closed automatically
Bad read....................................7
Bad write 8
Possible checksum error in program board.......9
Diskette/Drive inoperative ....A
a. No diskette in drive
b. Door open
c. Diskette drive inoperative
Write protected-Check job diskette slot..........B
Trying to read and write in same file ....E
Format number missing (see a or b below) ....F
a. Using a program diskette as a job diskette
b. Job diskette is missing a valid format number

PROGRAM LOADING:

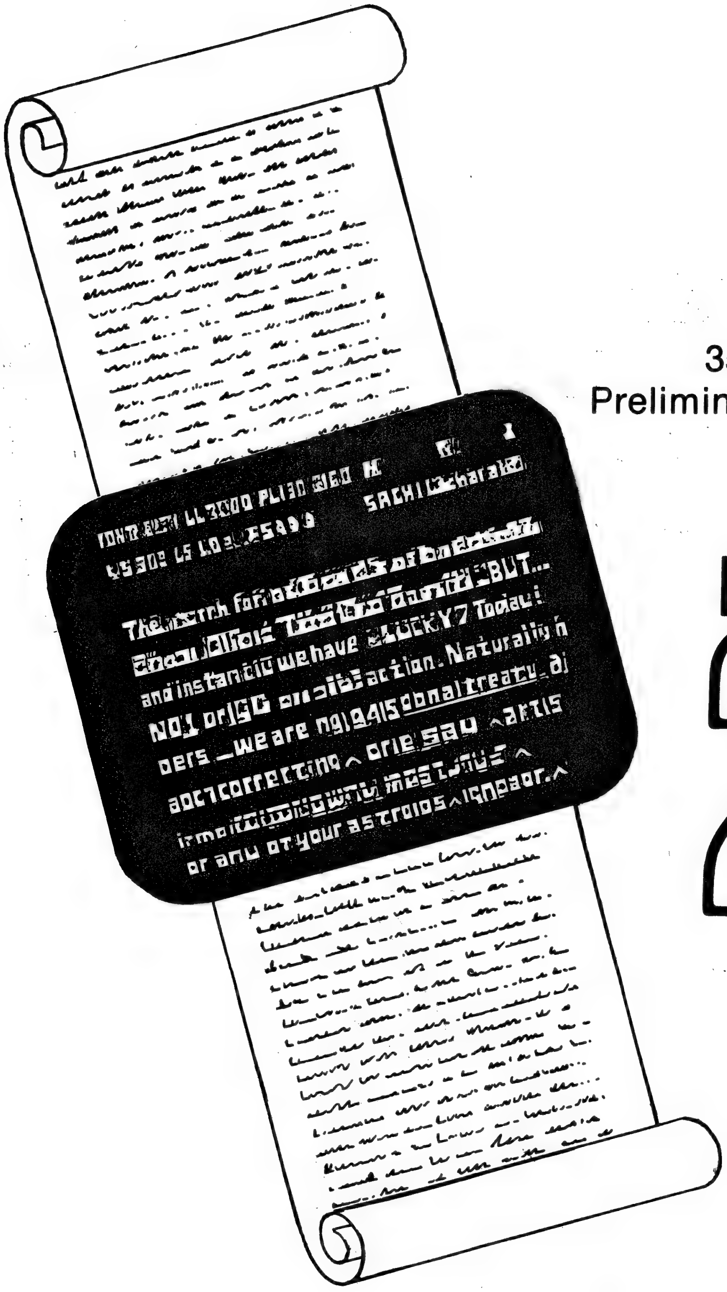
Program file is failing C
Door open ....D
Memory board is failing...................#### M

# means digit

Note: All alpha following © must be lower case.
Never write a job file in file "z"... for erasing only!

2/28/77

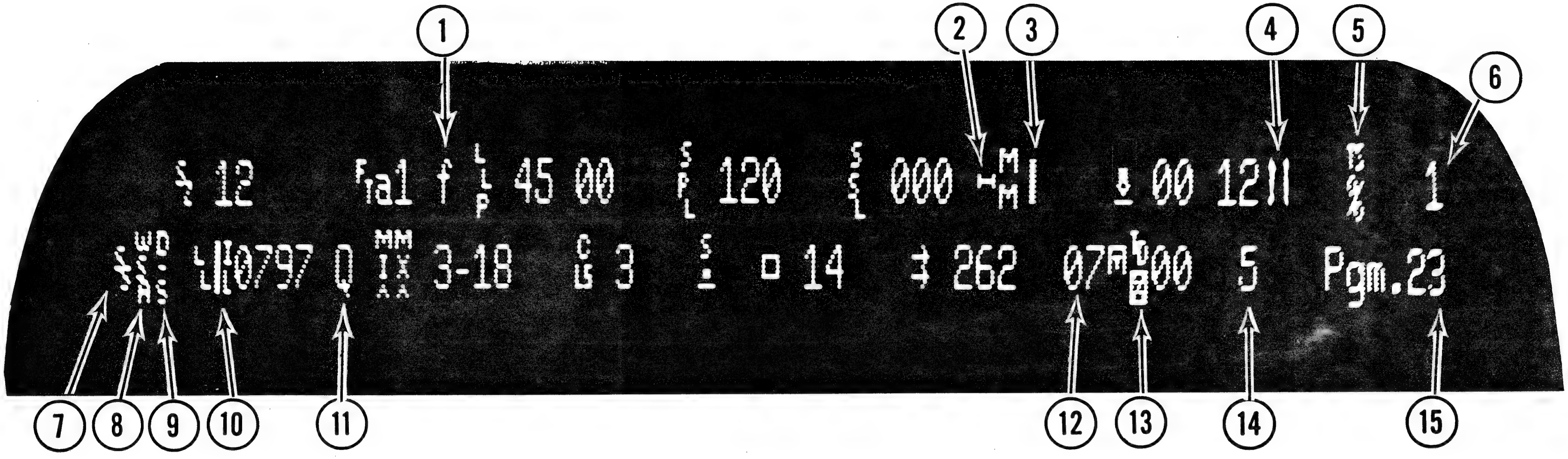
ADDRESSOGRAPH MULTIGRAPH
VARITYPER DIVISION
®
11 MT. PLEASANT AVENUE • EAST HANOVER, NEW JERSEY 07936



3500/4500/VDI Series
Preliminary Operating Instructions
January 28, 1978
Literature Kit: 17-8775-0

program
23

Function Field—Program 23



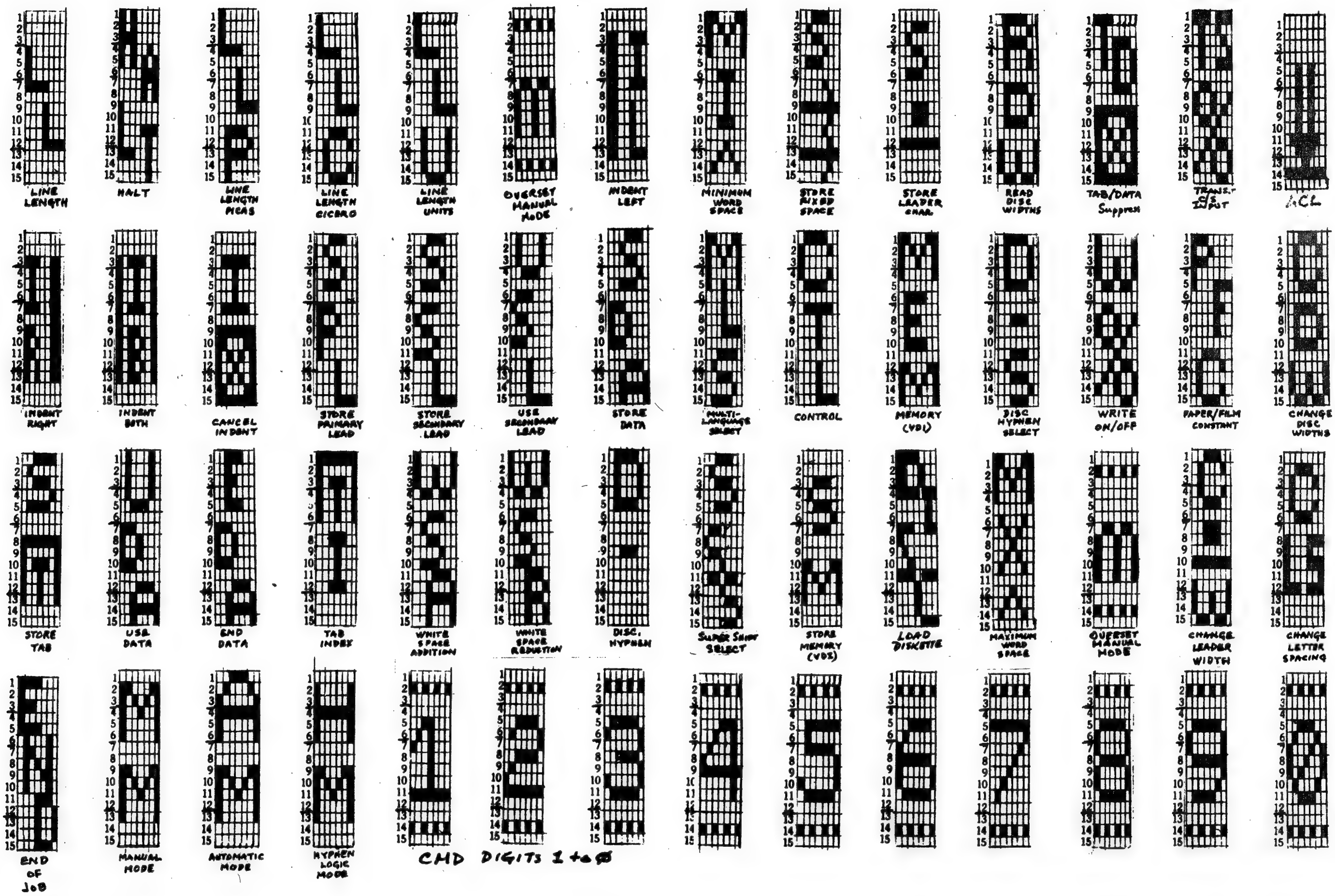
Function Field Labels

SZ	Type size that the C/S is at. . .
FTa1	Type disc “a” and font 1 (4500 series)
LLP	Line length (**P**=picas,**U**=units,**C**=ciceros)
SPL	Primary leading stored
SSL	Secondary leading stored
MM	Manual mode (**AM**=Auto,**HM**=Hyphenation)
↧	Accumulated leading - inches/points
LL	Line length remainder-units
MI‸	Minimum inter-word space
MX‸	Maximum inter-word space
CLS	Character letterspace value
S:	Stored leader character
⇉	Stored fixed space value
[T]	Tab column counter

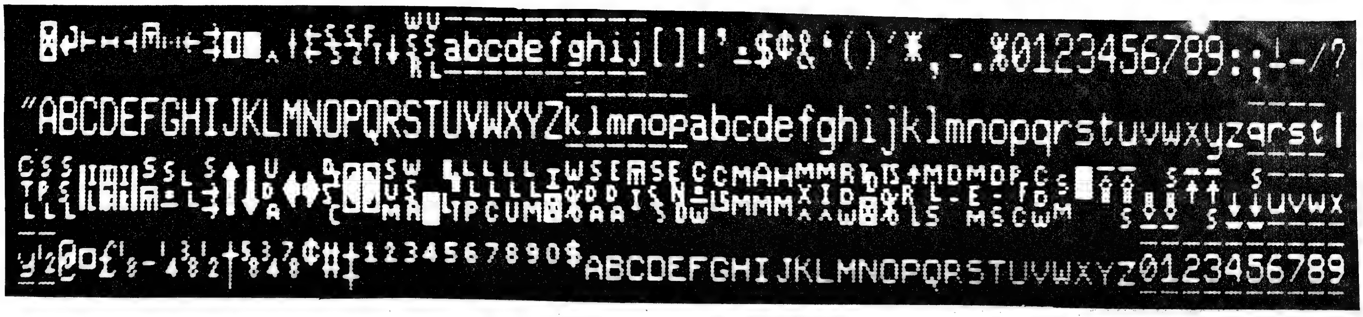
Function Field Status Indicators

1. Paper/film constant. . .“f” means for RC/film
2. Set ragged condition. . .“flush symbol” L-R-C
3. Strip mode ON. . .“one flashing bar”
4. Typesetter OFF. . .“Two flashing bars”
5. Translate C/S input utility. . .“TS %”
6. Format indicator for job diskette. . .“digit”
7. Super shift indicator. . .“SS”
8. White space addition/reduction-“WSA/WSR”
9. Discretionary hyphen select. . .“D-S”
10. Indent in effect. . .“IL/IR/IB”
11. Proof mode/70 lpm in effect. . .“Q”
12. Tab memory index. . .“01 ιo 99”
13. Tab suppress-ON. . .““TD-rubout”
14. Operation message area. . .“digits/alpha”
15. End of job diskette indicator. . .“4-3-2-1-0”

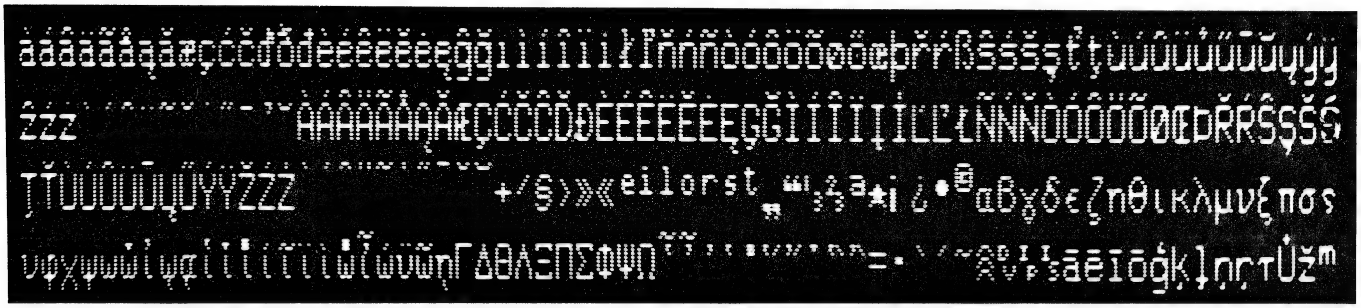
Program 23—New Function Display


LINE LENGTH
HALT
LINE LENGTH PICAS
LINE LENGTH CICERO
LINE LENGTH UNITS
OVERSET MANUAL MODE
INDENT LEFT
MINIMUM WORD SPACE
STORE FIXED SPACE
STORE LEADER CHAR.
READ DISC WIDTHS
TAB/DATA Suppress
TRANS. C/S INPUT
ACL
INDENT RIGHT
INDENT BOTH
CANCEL INDENT
STORE PRIMARY LEAD
STORE SECONDARY LEAD
USE SECONDARY LEAD
STORE DATA
MULTI-LANGUAGE SELECT
CONTROL
MEMORY (VDI)
DISC HYPHEN SELECT
WRITE ON/OFF
PAPER/FILM CONSTANT
CHANGE DISC WIDTHS
STORE TAB
USE DATA
END DATA
TAB INDEX
WHITE SPACE ADDITION
WHITE SPACE REDUCTION
DISC. HYPHEN
Super Shift SELECT
STORE MEMORY (VDI)
LOAD DISKETTE
MAXIMUM WORD SPACE
OVERSET MANUAL MODE
CHANGE LEADER WIDTH
CHANGE LETTER SPACING
END OF JOB
MANUAL MODE
AUTOMATIC MODE
HYPHEN LOGIC MODE
CMD DIGITS 1 to 0

The introduction of the base 256 character generator has provided the capability to display all keyboard codes used in the system. Therefore, commands such as line length, primary leading, secondary leading, etc. are now being displayed and embedded in the typing line at the time and point of entry. This was possible through a new "Multi" character generator developed for the Comp/Set 3500 and 4500 series. Pictured above is the new 7 x 15 matrix command symbols. The domestic (or basic) version will display up to 256 characters from an on-line repertoire of 256 characters. Whereas, the Multi-language version will display up to 256 characters from an on-line repertoire of 512 characters. More screen visibility than any other direct-entry phototypesetter in the world.



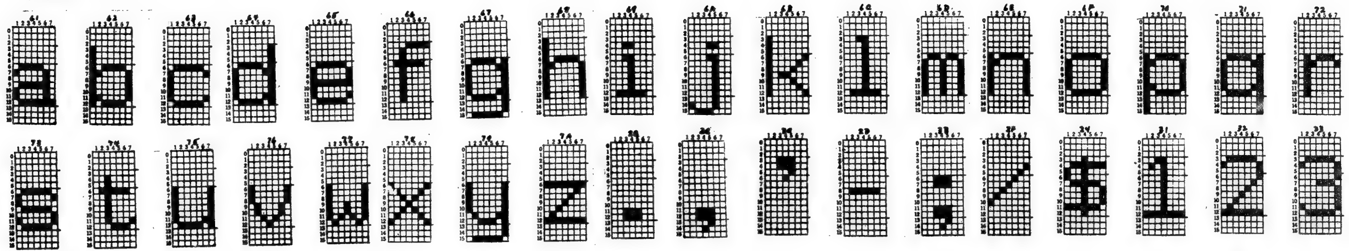
(pictured above is the "base" 256 character repertoire used in domestic 3500/4500 Comp/Set phototypesetters--R.A.M.- program 23)

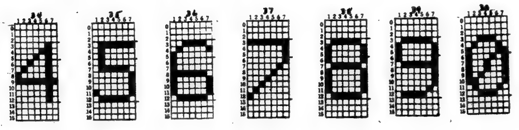


(pictured above is the additional 256 character repertoire used in the "Multi-language" Comp/Set models -- R.A.M. - program 23)

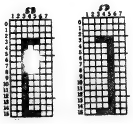
Program 23—New Alpha/numeric Display

Unshift

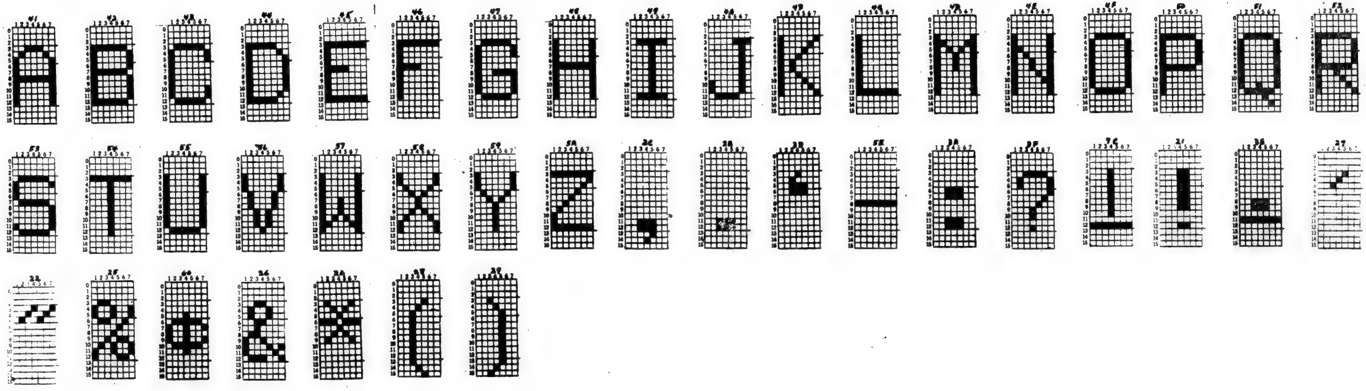

a b c d e f g h i j k l m n o p q r
s t u v w x y z . , ' - ; / $ 1 2 3



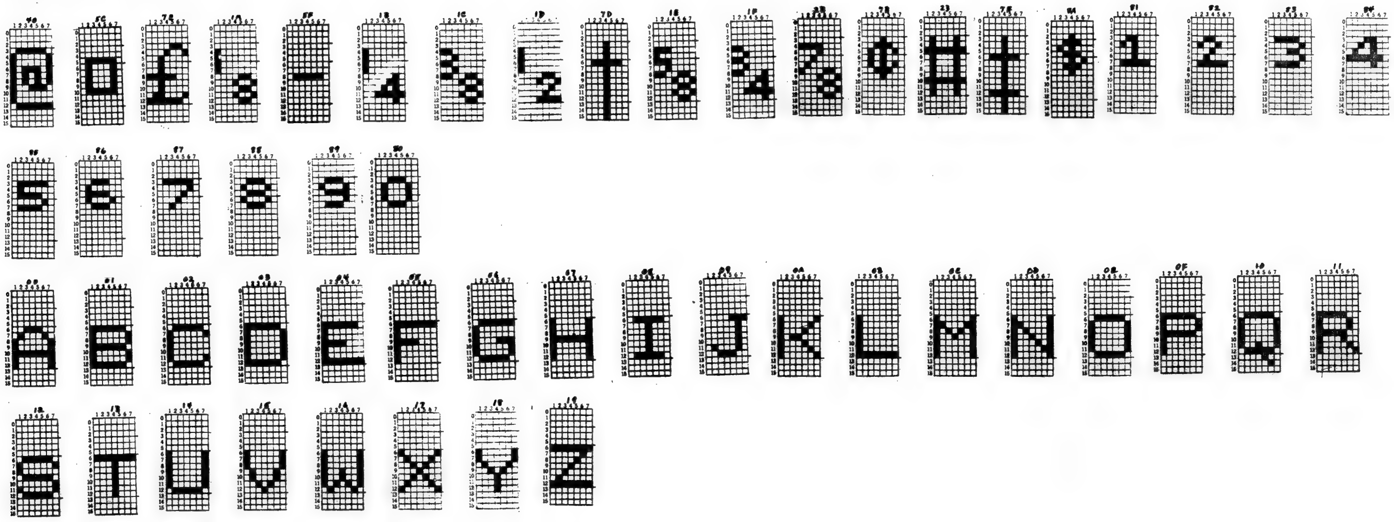
Control characters



Shift


A B C D E F G H I J K L M N O P Q R
S T U V W X Y Z , . ' — : ? 1 ! _ '
" % ¢ & * ( )

Super shift


@ □ £ ⅛ — ¼ ⅜ ½ † ⅝ ¾ ⅞ ¢ # ‡ $ 1 2 3 4
5 6 7 8 9 0
A B C D E F G H I J K L M N O P Q R
S T U V W X Y Z

Program 23—256 Character Generator Display—U.S.

Super Shift Select—Job

LC: a b c d e f g h i j k l m n o p q r s t u v w x y z . , ’ - ; / $ 1 2 3 4 5 6 7 8 9 0
UC: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z . , ‘ — : ? | ! . ′ ″ % ¢ & * ( )
SS: @ □ £ ⅛ – ¼ ⅜ ½ † ⅝ ¾ ⅞ ¢ # ‡ 1 2 3 4 5 6 7 8 9 0 $ $ 1 2 3 4 5 6 7 8 9 0

Super Shift Select—Book

LC: a b c d e f g h i j k l m n o p q r s t u v w x y z . , ’ - ; / $ 1 2 3 4 5 6 7 8 9 0
UC: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z . , ‘ — : ? | ! . © £ % ¢ & * ( )
SS: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Z P Q R S T U V W X Y

All type disc formats other than the two above can all be related to either Job or Book—Font 1 screen characters. More screen visibility than an other Direct Entry Phototypesetter in the World.

PROGRAM 23
4500/504 SERIES PROGRAM & DISC LOADING

1. Turn the Comp/Set*"on" inside the type disc compartment.

2. Insert Program Diskette #1010 into the 504

3. Press RESET MEM and the visual "DISC a→r" displays.

4. Press file letters in sequence according to the instruction sheet enclosed with the Program 23 diskette.

5. Press CURSOR LEFT DATA. The 504 module is now loaded. The function field will display and the turret will begin turning and checking for a type disc in all four positions. If the C/S finds all turret positions missing type discs, the word "DISC" will display in the lower right side of the function field. If one type disc is present, DISC mode will not display.

6. Eject the program diskette.

7. Insert the four type discs:

    a. Press the lower case "d" to move the turret to place a type disc on the "d" spindle. Secure type disc on position "d".

    b. Press the lower case "c" to move the turret to place a type disc on the "c" spindle. Secure type disc on position "c".

    c. Press the lower case "b" to move the turret to place a type disc on the "b" spindle. Secure type disc on position "b".

    d. Press the lower case "a" to move the turret to place a type disc on the "a" spindle. Secure type disc on position "a".

8. Close the disc compartment cover on the C/S and press RETURN. The word DISC will disappear and the widths of all four discs will be stored into memory. After the widths have been stored, the "cursor" will display on the screen.

9. Fill in the function field. To fill in the "font" information, press FONT, then a,b,c or d and then a digit 1,2,3 or 4 followed by FLUSH LEFT RETURN. The "disc letter" will display in the function field between font and the digit.

10. Insert your job diskette and press READ.

---

*Comp/Set is a registered trademark of the Adddressograph Multigraph Corporation. For simplicity in these preliminary operating instructions, the Comp/Set Phototypesetting system will be referred to as "C/S".

6. Holding the new type disc by the small knurled knob, place it on the empty turret position. Tighten the retaining handle by turning it clockwise. If inserted properly, the type disc will spin easily.
7. Close the cover. Press return. The word DISC will disappear. The widths for all four type discs will be read into memory.

CORRECTING A PARITY ERROR

If a width cannot be read by the 4500, the disc position and character location will display in the lower right side of the function field.

1. Locate the character on the Character Width/Disc Location Chart.
2. To enter the character width, press control, i, and three digits. The first two digits represent the whole unit width value of the character. The third digit represents a half unit value. If the width of that character does not contain a half, the third digit must be zero. Any other number from 1-9 is recognized as a half.
3. When the width has been read, the parity error message will disappear from the function field and the rest of the disc widths will be stored automatically.

PROGRAM 23

LOADING THE 4500/504H SERIES FILE DIRECTORY

1. Insert Program Diskette #1010 into the 504H.
2. Press RESET MEM and the visual "DISC a-r" displays.
3. Press the file letter for the file directory according to the instruction sheet enclosed with the Program 23 diskette.
4. Press CURSOR LEFT INSERT and the file directory visual will appear
5. Remove the Program Diskette and insert the job diskette to be examined. See "File Directory" section in the 504H operating instructions for the additional information on usage.

LOADING THE NON-COUNTING PROGRAM

1. Insert Program Diskette #1010 into the 504H.
2. Press RESET MEM and the visual "DISC a-r" displays.
3. Press the file letter for the file directory according to the instruction sheet enclosed with the Program 23 diskette.
4. Press CURSOR LEFT INSERT and the Non-counting function field appears.
5. Remove the Program Diskette and insert the job diskette to be edited. See "Non-counting section" in the VDI/5404 operating instruction (#17-7924-0) for the additional instructions on usage.

PROGRAM 23 -- 503/504H ONLY
3500/4500 SERIES PHOTOTYPESETTER
SINGLE KEY FUNCTION DESCRIPTION

SIZE CHANGE:

The size command is entered by depressing the "Size key" followed by two (2) digits. This function has associated "command digits" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions are found in Lesson 3-page II-3-1 of the attached manual.

LINE LENGTH CHANGE:

The line length command is entered by depressing the "Line Length key" followed by four (4) digits. The line length sequence will now display on the typing line as well as in the function field. This function has associated "command digits" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions are found in Lesson 5-page II-5-1 of the attached manual.

STORE PRIMARY LEADING:

The store primary leading command is entered by depressing the "Store PL key" followed by three (3) digits. The store primary leading sequence will now display on the typing line as well as in the function field. This function has associated "command digits" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions are found in Lesson 6-page II-6-1 of the attached manual.

STORE SECONDARY LEADING:

The store secondary leading command is entered by depressing the "Store SL key" followed by three (3) digits. The store secondary leading sequence will now display on the typing line as well as in the function field. This function has associated "command digits" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions are found in Lesson 7-page II-7-1 of the attached manual.

FONT (style) CHANGE:

The font change command is entered by depressing the "Font key" followed by one (1) digit. This function has an associated "command digit" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions are found in Lesson 4-page II-4-1 of the attached manual.

FONT (Disc) CHANGE:
The font/disc change command is entered by depressing the "Font key" followed by a-b-c or d for type disc required and then a digit 1 to 4 for the font required. This function has an associated "command digit" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry.

SHIFT/SHIFT LOCK:
These keys access upper case characters on the typing line and on the type disc. It is a good rule to access all functions and record/playback commands while in lower case. When the Comp/Set is turned on...check to see that the "shift lock key" is up. Additional instructions are found in Lesson 16-page II-16-1 of the attached manual.

SUPER SHIFT: (on/off)
The Super Shift access key is depressed to access special typesetting characters. The super shift symbol shows only in the function field in this program. The "font one" characters from super shift will now show on the typing line as the lower case keys are pressed. (see "Super shift select" in Control command section) Additional instuctions are found in Lesson 16-page II-16-1 of the attached manual.

EM/EN SPACE:
The Em space will insert 18 relative units of space in the typeset copy and the En space will insert 9 relative units of space in copy. White space addition/reduction does not affect these fixed spaces. Additional instructions are found in Lesson 17-page II-17-1 of the attached manual.

FIXED SPACE (Use):
The Fixed Space command is entered by depressing the "Fixed Space key". The Fixed Space sequence is displayed on the typing line. This function has associated "command digits"(See Stored Fixed space listed under control funtions) and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions are found in Lesson 17-page II-17-1 of the attached manual.

SET CENTER:
The Center command is entered before or after a line of copy that is to be set centered in the line length selected. Additional instructions are found in Lesson 9-page II-9-1.

SET FLUSH LEFT:
The Flush Left command is entered before or after a line of copy that is to be set flush to the left margin in the line length selected. Additional instructions are found in Lesson 9-page II-9-1 of the attached manual.

SET FLUSH RIGHT:
The Flush right command is entered before or after a line of copy that is to be set flush to the right margin in the line length selected. Additional instructions are found in Lesson 9-page II-9-1 of the attached manual.

SET RAGGED BOTH:
The Ragged Both command is entered before copy by pressing the "Center key" twice. A single "Center key" must be pressed to end each paragraph and a new Ragged Both re-entered at the beginning of each succeeding paragraph. Additional instructions are found in Lesson 28-page II-28-1 of the attached manual.

SET RAGGED LEFT:
The Ragged Left command is entered before copy by pressing the "Flush right key" twice. A single "Flush Right key" must be pressed to end each paragraph and a new Ragged Left re-entered at the beginning of each succeeding paragraph. Additional instructions are found in Lesson 28-page II-28-1 of the attached manual.

SET RAGGED RIGHT:
The Ragged Right command is entered before copy by pressing the "Flush left key" twice. A single "Flush Left key" must be pressed to end each paragraph and a new Ragged Right re-entered at the beginning of each succeeding paragraph. Additional instructions are found in Lesson 28-page II-28-1 of the attached manual.

MORTISE:
The Mortise command is entered before the character to be moved to the left by 1/2 unit. The mortise command acts upon carriage movement rather then the width of the next character. Additional instructions are found in Lesson 21-page II-21-1.

RETURN:
The Return command is entered to end a line and send it to the typesetter. When reading back counted copy in "Auto mode", if a flush command or use leader is not present on that line, the Return will change to a "word space". Addition instructions are found in Lesson 13 -page II-13-1 of the attached manual.

RESET:
The Reset command is accessed by pressing "Reset key" followed by the "Data key". This command will initialize the typesetter, the function field and copy the disc(s) widths into memory.

TAB:
The Tab command puts the typesetter into a tabular composition mode. The "Tab key" will also access Tab storage memory each time the key is pressed. (see Tab Storage-"Control Function section")
Additional instructions are found in Lesson 24-page II-24-1 and the Tab/Data operating instructions in the attached manual.

USE LEADER:
The Use Leader command is accessed by pressing the "Use Leader key". It will cause the "stored leader character" in the function field to be automatically exposed across the remaining line length. Additional instructions are found in Lesson 20-Page II-20-1 of the attached manual.

WRITE:
The Write command is accessed by pressing the "Write key". It will cause the 503 or 504H to start punching paper tape or recording on a job diskette. Additional instructions are found in the 503H and 504H operating, instructions in the attached manual.

CONTROL:
The Control command is used as a precedence command to other keys to produce additional typesetting commands. See the accompanying descriptions under "Control Functions".

USE DATA STORAGE:
The Use Data Storage command is accessed by pressing the "Data key" followed by two (2) digits from 01 to 99. Additional instructions are found in the Tab/Data operating instructions in the attached manual.

USE TAB STORAGE:
The Use Tab Storage command is accessed by pressing the "Tab key". Additional instructions are found in the Tab/Data operating instructions in the attached manual.

Additional "Single key Commands" are listed on the following chart which are self-explanatory and/or are explained in the attached operating instructions.

PROGRAM 23 — 503/504 ONLY
3500/4500 COMP/SET PHOTOTYPESETTER — SINGLE KEY FUNCTIONS

Function	**key(s)**	**Displayed where?**	**Record/ Punched?**	**Found by Search[1]?**
Size change	Size ##	Typing field	YES	YES
Line length change	Line length ####	Typing & function field	YES	YES
Store primary lead	Store PL ###	Typing & function field	YES	YES
Store secondary lead	Store SL ###	Typing & function field	YES	YES
Use secondary lead	Sec lead	Typing field	YES	YES
Font change	Font #	Typing field	YES	YES
Font/Disc change	Font (a,b,c or d) #	Typing field	YES	YES
Shift	Shift	Upper case characters	N/A	N/A
Shift lock	Shift lock	Upper case characters	N/A	N/A
Super shift	Super shift (in or out)	Typing & function field	YES	NO
Em space (18 units)	Em space	Typing field	YES	YES
En space (9 units)	En space	Typing field	YES	YES
Fixed space	Fixed space	Typing field with digits	YES	YES
Set center	Center	Typing field	YES	YES
Set flush left	Flush left	Typing field	YES	YES
Set flush right	Flush right	Typing field	YES	YES
Set ragged both	Center Center	Typing & function field	YES	YES
Set ragged left	Flush right Flush right	Typing & function field	YES	YES
Set ragged right	Flush left Flush left	Typing & function field	YES	YES
Mortise	Minus ½ unit	Typing field	YES	YES
Return	Return	Typing field	YES	YES[2]
Reset	Reset Data	N/A	(Initializes Comp/Set & function field)	
Tab	Tab	Typing field	YES	YES[2]
Use leader character	Use leader	Typing field	YES	YES
Write/punch	Write	Function field	N/A	N/A
Control functions	Control + key(s)	Typing & Function field	YES	YES

TAB/DATA OPTION

Use data storage	Data ##	Typing field	YES	N/A
Use Tab storage	Tab	Typing field	YES	N/A

EDITING KEYS

Cursor left	(arrow left)	Typing field	N/A	N/A
Cursor right	(arrow right)	Typing field	N/A	N/A
Single character erase	Single erase	erases last character typed	N/A	N/A
Stop/Step reader	Cursor right (while reading)	Typing field	N/A	N/A
Use reader	Read	Typing & Function field	N/A	N/A
Use search	Search	Typing & Function field	N/A	N/A
Word erase	Word erase	Erases last word	N/A	N/A

PROGRAM TAPE/DISKETTE LOADING

Program load-503H	Reset Mem	Screen blank	N/A	N/A
Program load-504H	See 504H instructions	Screen	N/A	N/A

NOTES:

Note[1]: To search to functions with digits, the operator must put entire command & digits in search field.

Note[2]: Searching to a return or tab...return/tab code is stripped and operator must manually keyboard correct key to continue.

# denotes digits

N/A Not applicable

10/19/77

PROGRAM 23 -- 503H/504H
3500/4500 SERIES PHOTOTYPESETTER
CONTROL FUNCTION DESCRIPTION

ADD LEAD:

The Add Lead command is entered by pressing the "Control key" followed by the lower case "v". This function has associated "command digits" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions are found in the attached manual in Lesson 25-Page II-25-1.

AUTO MODE:

Automatic mode command is entered by pressing the "Control key" followed by the lower case "a". The Auto mode command will now display on the typing line as well as in the function field. Additional instructions are found in the attached manual in Lesson 13-page II-13-1.

CANCEL INDENTS:

The Cancel Indents command is entered by pressing the "Control key" followed by the "Semi-colon key". This command will now display on the typing line. Additional instructions are found in the attached manual in Lesson 18-page II-18-1

CANCEL LINE:

To cancel an entire line in the typing field, press the "Control key" followed by a lower case "c + l". BE SURE TO RE-ENTER ANY FUNCTION THAT IS NEEDED WHEN RETYPING AN ERASED LINE.

CLEAR ACCUMULATED LEADING:

To reset the leading counter in the function field to all zeros, press "Control key" followed by the lower case "k". This command is not displayed in the typing line and is not recorded.

DISCRETIONARY HYPHEN:

The Discretionary hyphen command is accessed differently depending on the "Discretionary Hyphen Select" command. See next function...

DISCRETIONARY HYPHEN SELECT:

The Discretionary Hyphen Select command is accessed by pressing the "Control key" followed by a "comma". The "D-S" is displayed in the function field to denote "on". When the "D-S" is on...

Permanent Hyphen = Control key followed by Hyphen key
Disc. Hyphen = Single hyphen key

When the "D-S" is off, the single hyphen key is a permanent hyphen and the discretionary hyphen is a "Control key" plus the hyphen key.

END OF JOB (Leading):

The End-of-job leading command is entered by pressing the "Control key" followed by the lower case "e". This command will advance the photo material 500 points. The command is not written on a diskette and is punched on paper tape. Additional instructions are found in the attached manual in Lesson 10-page II-10-1.

FLOATING ACCENT ADJUSTMENT:

The Floating Accent Adjustment is entered by pressing the "Control key" followed by the "accent key" and either a lower case "a to r" for minus 1/2 unit movements or an upper case "A to R" for plus 1/2 unit movements. (For example: a=-1/2, b=-1, c=-One & 1/2 units,etc and A=+1/2, B=+1, C=+One & 1/2 units, etc.) NOTE: See changing widths in Width Storage Utility section for "Auto Centering of Accents".

HYPHENATION MODE:

The Hyphenation Mode command is entered by pressing the "Control key" followed by the lower case "u + h". Once entered, the Hyphenation module will operate on an overset word from word space to word space. Once a permanent hyphen is inserted and the line sent...any other hyphen points in that partial word will display as a " h ".

INDENT BOTH:

The Indent Both command is entered by pressing the "Control key + Center" followed by four (4) digits. This command is now displayed in the typing line as well as the function field. This function has associated "command digits" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions are found in the attached manual in Lesson 18-page II-18-1.

INDENT LEFT:

The Indent Left command is entered by pressing the "Control key" + Flush Left" followed by four (4) digits. (See "Indent Both" above for additional procedures).

INDENT RIGHT:

The Indent Right command is entered by pressing the "Control key + Flush Right" followed by four (4) digits. (See "Indent Both" above for additional procedures).

INSERT WIDTH:

The Insert Width command is entered after a "Width error" in the function field by pressing a "Control + lower case i" followed by three (3) digits. The first two are whole units and the third is-1/2 unit.

LEADER WIDTH CHANGE:
The Leader Width Change command is entered by pressing "Control + w" followed by two (2) digits. This command is now displayed in the typing line as well as the function field. This function has associated "command digits" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions are in the attached manual in Lesson 20-page II-20-4.

LINE LENGTH-PICAS:
The Line Length-pica command is entered by pressing "Control + d" followed by the digit zero (0). This command must be followed with a new line length entry (LL key + four (4) digits). The LLP entry is now displayed in the typing line as well as the function field. Additional instructions are found in the attached manual in Lesson 29-page II-29-1.

LINE LENGTH-CICERO:
The Line Length-cicero command is entered by pressing "Control + d" followed by the digit one (1). This command must be followed with a new line length entry (LL key + four (4) digits).The LLC entry is now displayed in the typing line as well as the function field. Additional instructions are found in the attached manual in Lesson 29-page II-29-1.

LINE LENGTH-UNITS:
The Line Length-units command is entered by pressing "Control + d" followed by the digit two (2). This command must be followed with a new line length entry (LL key + four (4) digits).The LLU entry is now displayed in the typing line as well as the function field. The LLU command will also affect entry of "Indents". If LLU is in effect, the indent entry of four digits will be read as units also. Additional instructions are found in the attached manual in Lesson 29-page II-29-1.

LETTERSPACE CHANGE:
The Letterspace change command is entered by pressing "Control + s" followed by one (1) digit. The command is now displayed on the typing line as well as in the function field. This function has associated "command digits" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions are in the attached manual in Lesson 15-page II-15-1.

MANUAL MODE:
Manual mode command is entered by pressing the "Control + m". The Manual mode command will now display on the typing line as well as in the function field.. Additional instructions are in the attached manual in Lesson 13-page II-13-1.

MAX.WORD SPACE CHANGE:
The Maximum Word Space change command is entered by pressing the "Control + x" followed by two (2) digits. This command will now display on the typing line as well as in the function field. This function has associated "command digits" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions are in the attached manual in Lesson 14-page II-14-1.

MIN.WORD SPACE CHANGE:
The Minimum Word Space change command is entered by pressing the "Control + n" followed by one (1) digit. This command will now display on the typing line as well as in the function field. This function has an associated "command digit" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions are in the attached manual in Lesson 14-page II-14-1.

MULTI-LANGUAGE SELECT:
The Multi-Language select command is entered by pressing the "Control + Em" followed by a digit one (1) to eight (8) depending on the languages available in that 3550/4550 series C/S. This command will now display on the typing line as well as in the function field. This function has an associated "command digit" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry.

PAPER/FILM CONSTANT (Film/RC):
The Paper/Film constant command is entered by pressing the "Control + p" followed by the digit zero (0) as well as re-entering the Line length sequence. This command will now display on the typing line as well as in the function field. This function has an associated "command digit" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions are in the attached manual in Lesson 27-page II-27-1.

PAPER/FILM CONSTANT (Stab.):
The Paper/Film constant command is entered by pressing the "Control + p" followed by the digit one (1) as well as re-entering the Line length sequence. This command will now display on the typing line as well as in the function field. This function has an associated "command digit" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions are in the attached manual in Lesson 27-page II-27-1.

PROOF MODE (on/off):
The Proof Mode command is entered by pressing the "Control + q". This command will cause the typesetter to operate at 70 newspaper lines per minute. Quality typesetting cannot be obtained at this speed. To return to the "standard" speed of 50 Lpm, press the same command.

RE-READ WIDTH:
The Re-read Width command is entered after a width error is present in the function field by pressing a "Control + g". The program will attempt to re-read that width three (3) times. If "width error" is still present, remove that type disc and clean with lighter fluid. Additional instructions are in the attached manual in Lesson 26-page II-26-1.

REPEAT LINE:
The Repeat Line command is entered in MANUAL MODE ONLY by entering a "Control + Ret". This command when issued at the end of the typeset line will duplicate that line in the typing field while that line is being typeset.

REVERSE CARRIAGE SEQUENCE (on/off):
The Reverse Carriage sequence command is entered IN MANUAL MODE ONLY by entering a "Control + Minus 1/2 key". The stored fixed space in the function field must contain at least one unit more then the digits in the reverse carriage sequence. If a correction must be made in the "reverse carriage sequence line", erase the entire line and retype the correct copy. Additional instructions are in the attached manual in Lesson 23-page II-23-1.

SINGLE FIXED SPACE:
The Single Fixed Space command is entered by pressing the "Control + z" followed by one (1) digit from 1 to 9. This function has an associated "command digit" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions are in the attached manual in Lesson 17-page II-17-2.

STORED FIXED SPACE:
The Stored Fixed Space command is entered by pressing the "Control + Fixed Space key" followed by three (3) digits. This function has associated "command digits" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions are in the attached manual in Lesson 17-page II-17-1.

STORE LEADER CHARACTER:

The Store Leader Character command is entered by pressing the "Control + Use Leader key" followed by the character to be leadered. This command will now display in the typing line as well as in the function field. If in super shift, the "font 1" super shift character will be displayed in the typing and function field. Additional instructions are in the attached manual in Lesson 20-Page II-21-1.

STORE ALL DISC WIDTHS:

The Store Disc Widths command is entered by pressing "Control + y". All type disc widths (448-3500 series/1992-4500 series) are stored into memory. Individual character widths may be changed using the "Store Single Width" command or the "Width Storage utility".

STORE SINGLE DISC WIDTH:

The Store Single Disc Width command is entered by pressing "Control + EN" followed by Font + Disc letter + digit 1 to 4. The function field in the "Width Error" area will display [disc letter][font digit] and [three upper case "Xs"]. For example: a1XXX. When the character location from the "Camera Width Chart is pressed, the actual width will be flashing (e.g. a1090), the first 2 digits are the whole widths and the third digit is half widths. To change the width, press three digits and they are stored in that Disc/font location. For 3500 series always use Disc "a" to access the single type disc widths.

SUPER SHIFT SELECT (Job):

The Super Shift Select-Job command is entered by pressing "Control + Super shift + j". This command will display on the typing line and when the "Super Shift key" is pressed, font one-super shift characters will display on the typing line for Job format type discs.

SUPER SHIFT SELECT (Book):

The Super Shift Select-Book command is entered by pressing "Control + Super shift + b". This command will display on the typing line and when the "Super Shift key" is pressed, font one-super shift characters will display on the typing line for Book-format type discs.

WHITE SPACE ADDITION:

The White Space Addition command is entered by pressing the "Control + f" followed by a digit (1 to 9) representing 1/8 units to be inserted between characters. This command will now display on the typing line as well as in the function field. This function has an associated "command digit" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions not used with reverse carriage are in the attached manual in Lesson 22-page II-22-1.

WHITE SPACE REDUCTION:

The White Space Addition command is entered by pressing the "Control + r" followed by a digit (1 to 9) representing 1/8 units to be reduced between characters. This command will now display on the typing line as well as in the function field. This function has an associated "command digit" and requires that the entire sequence be overtyped starting with the function symbol or corrected by entering the correct command sequence next to the incorrect entry. Additional instructions are in the attached manual in Lesson 22-page II-22-1.

Additional "Control Function Commands" are listed on the following chart which are self-explanatory and/or are explained in the attached operating instructions.

operator aids

Comp/Set®

phototypesetting
systems

APPROXIMATE POINT SIZE OF ASCENDERS AND DESCENDERS

Type Size (Points)	Approximate point size of:	
	Ascenders (80%)	Descenders (20%)
5	4 Point	1 Point
5½	4½	1
6	5	1
7	5½	1½
8	6½	1½
9	7	2
10	8	2
11	9	2
12	9½	2½
14	11	3
18	14½	3½
24	19	5
30	24	6
36	29	7
48	38½	9½
60	49	12
72	57½	14½

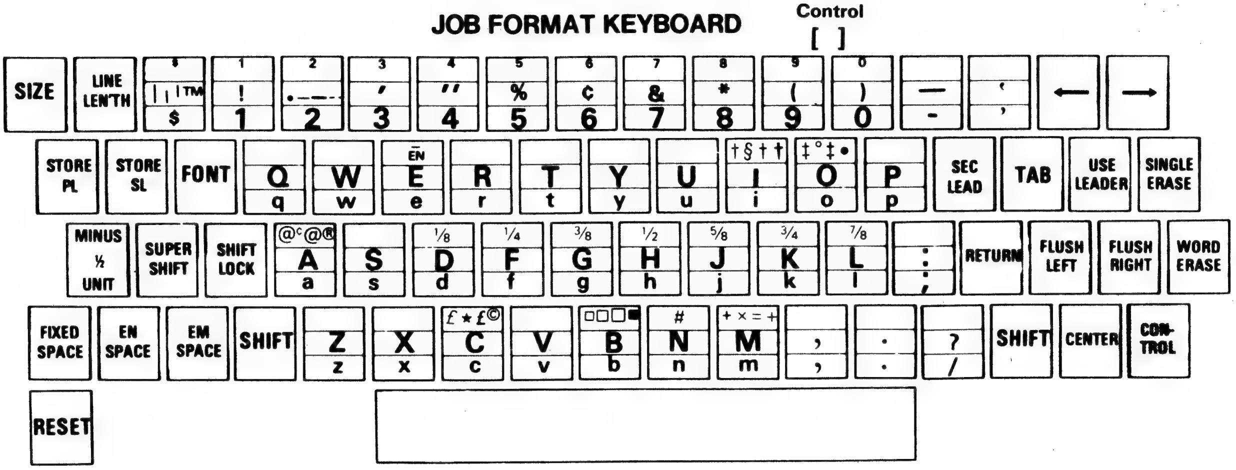
To Maintain Leading Between Lines of Different Sizes:

1. Determine descender value of largest size in first line.
2. Determine ascender value of largest size in next line.
3. Add values of 1 and 2 above to determine minimum leading required.
4. If additional leading is desired, add such to the minimum amount.

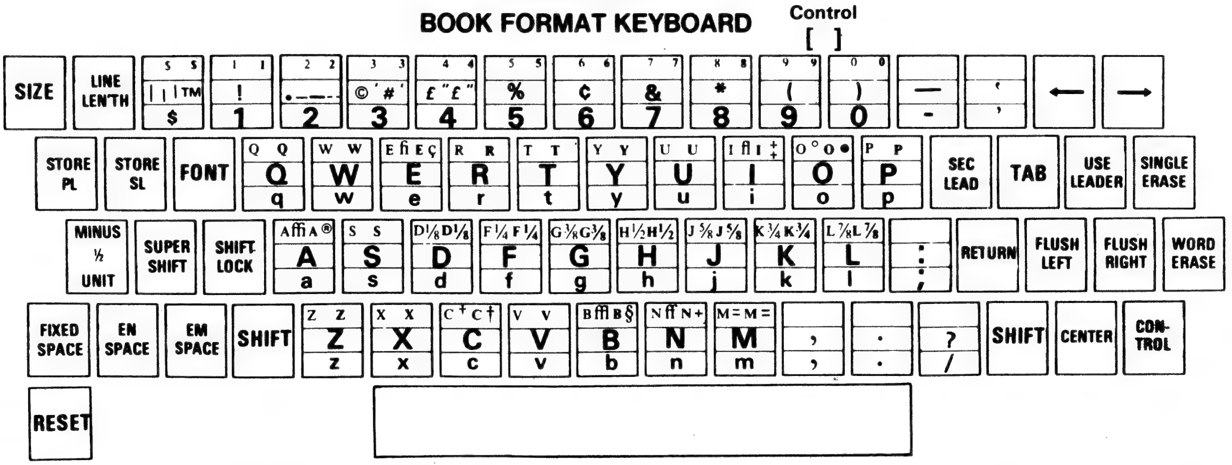
Mark-Up Abbreviations

Size	SF	Use Leader	|··|
Font	FT	Return	⮐
Line Length	4L	Flush Left	⊢
Store Primary Leading	PL	Flush Right	⊣
Store Secondary Leading	SL	Center	⊢⊣
Use Secondary Leading	2L	Reverse Carriage	⇇ or © - ½
Lower Case	LC	Repeat Line	RL or © ⮐
Upper Case	UC	Control	©
Super Case	Ss	Ragged Right	⊢ ⊢
Mortise ½ unit	←	Ragged Left	⊣ ⊣
Store Fixed Space	©FS (3 digits)	Ragged Both	⊢⊣ ⊢⊣
Tab	🅃	Indent Left	© ⊢ (4 digits)
Use Fixed Space	FS	Indent Right	© ⊣ (4 digits)
EN Space	🄽	Indent Both	© ⊢⊣ (4 digits)
EM Space	🄼	White Space Reduction	© r (digit)
Store Leader	STL or © |··|	White Space Addition	© f (digit)

COMP/SET
JOB FORMAT KEYBOARD

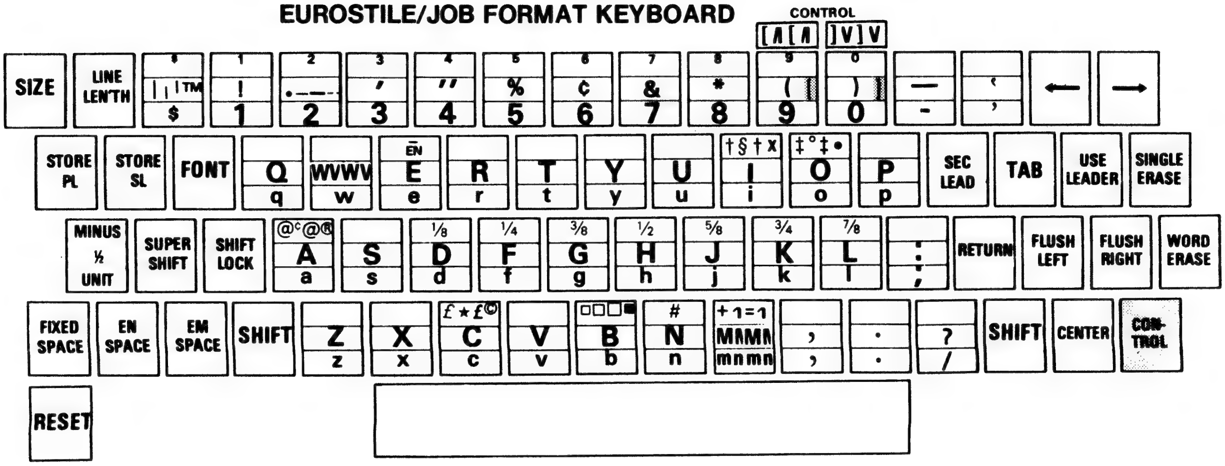

Control
[ ]
SIZE
LINE LENGTH
$
1 ! 1
2 2
3 3
4 4
5 % 5
6 ¢ 6
7 & 7
8 * 8
9 (9
0) 0
— -
' ,
←
→
STORE PL
STORE SL
FONT
Q q
W w
EN E e
R r
T t
Y y
U u
† § † † I i
‡ ° ‡ • O o
P p
SEC LEAD
TAB
USE LEADER
SINGLE ERASE
MINUS ½ UNIT
SUPER SHIFT
SHIFT LOCK
@ © @ ® A a
S s
⅛ D d
¼ F f
⅜ G g
½ H h
⅝ J j
¾ K k
⅞ L l
: ;
RETURN
FLUSH LEFT
FLUSH RIGHT
WORD ERASE
FIXED SPACE
EN SPACE
EM SPACE
SHIFT
Z z
X x
£ ★ £ © C c
V v
□□□■ B b
# N n
+ × = + M m
, ,
. .
? /
SHIFT
CENTER
CONTROL
RESET

COMP/SET
BOOK FORMAT KEYBOARD


Control
[ ]
SIZE
LINE LENGTH
$ $ $
1 1 ! 1
2 2 2
3 3 © ' # ' 3
4 4 £ " £ " 4
5 5 % 5
6 6 ¢ 6
7 7 & 7
8 8 * 8
9 9 (9
0 0) 0
— -
' ,
←
→
STORE PL
STORE SL
FONT
Q Q Q q
W W W w
E fi E Ç E e
R R R r
T T T t
Y Y Y y
U U U u
I fl I ‡ I i
O ° O • O o
P P P p
SEC LEAD
TAB
USE LEADER
SINGLE ERASE
MINUS ½ UNIT
SUPER SHIFT
SHIFT LOCK
A ffi A ® A a
S S S s
D ⅛ D ⅛ D d
F ¼ F ¼ F f
G ⅜ G ⅜ G g
H ½ H ½ H h
J ⅝ J ⅝ J j
K ¾ K ¾ K k
L ⅞ L ⅞ L l
: ;
RETURN
FLUSH LEFT
FLUSH RIGHT
WORD ERASE
FIXED SPACE
EN SPACE
EM SPACE
SHIFT
Z Z Z z
X X X x
C † C † C c
V V V v
B ffl B § B b
N ff N + N n
M = M = M m
, ,
. .
? /
SHIFT
CENTER
CONTROL
RESET

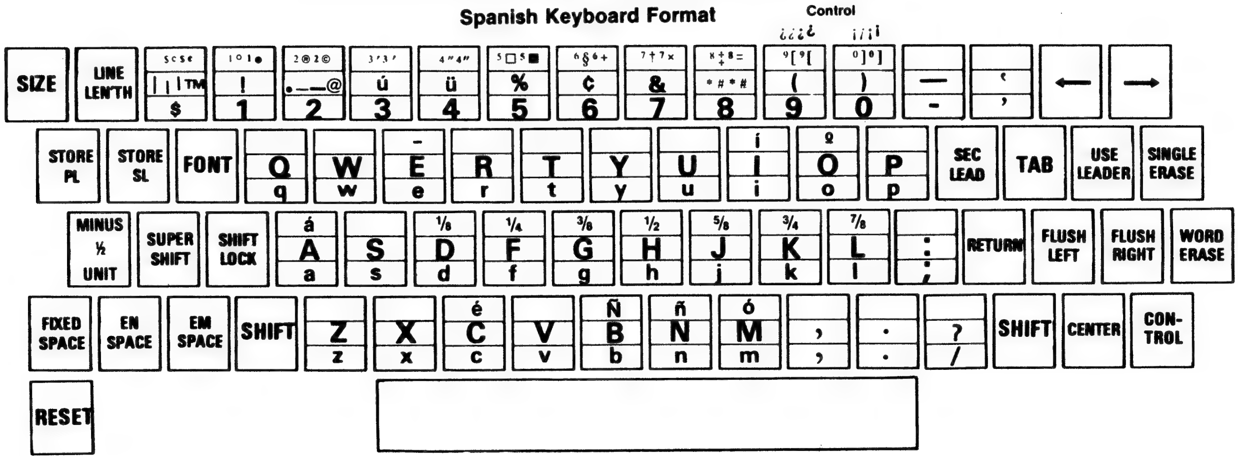
VT 054 COMP/SET

EUROSTILE/JOB FORMAT KEYBOARD


CONTROL
SIZE
LINE LENTH
1 2 3 4 5 6 7 8 9 0
! % ¢ & * ( )
STORE PL
STORE SL
FONT
Q W E R T Y U I O P
SEC LEAD
TAB
USE LEADER
SINGLE ERASE
MINUS ½ UNIT
SUPER SHIFT
SHIFT LOCK
A S D F G H J K L
⅛ ¼ ⅜ ½ ⅝ ¾ ⅞
RETURN
FLUSH LEFT
FLUSH RIGHT
WORD ERASE
FIXED SPACE
EN SPACE
EM SPACE
SHIFT
Z X C V B N
? /
SHIFT
CENTER
CON-TROL
RESET

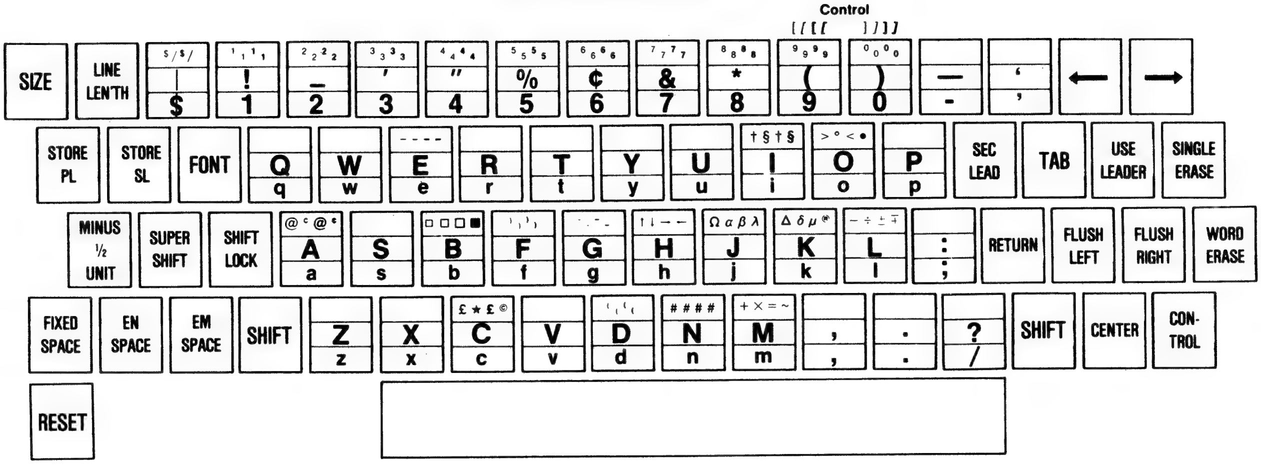
COMP/SET 500/510 PHOTOTYPESETTER

Spanish Keyboard Format


Control
¿ ¡
SIZE
LINE LENTH
1 2 3 4 5 6 7 8 9 0
! ú ü % ¢ & ( )
STORE PL
STORE SL
FONT
Q W E R T Y U I O P
SEC LEAD
TAB
USE LEADER
SINGLE ERASE
MINUS ½ UNIT
SUPER SHIFT
SHIFT LOCK
á
A S D F G H J K L
⅛ ¼ ⅜ ½ ⅝ ¾ ⅞
RETURN
FLUSH LEFT
FLUSH RIGHT
WORD ERASE
FIXED SPACE
EN SPACE
EM SPACE
SHIFT
é Ñ ñ ó
Z X C V B N M
? /
SHIFT
CENTER
CON-TROL
RESET

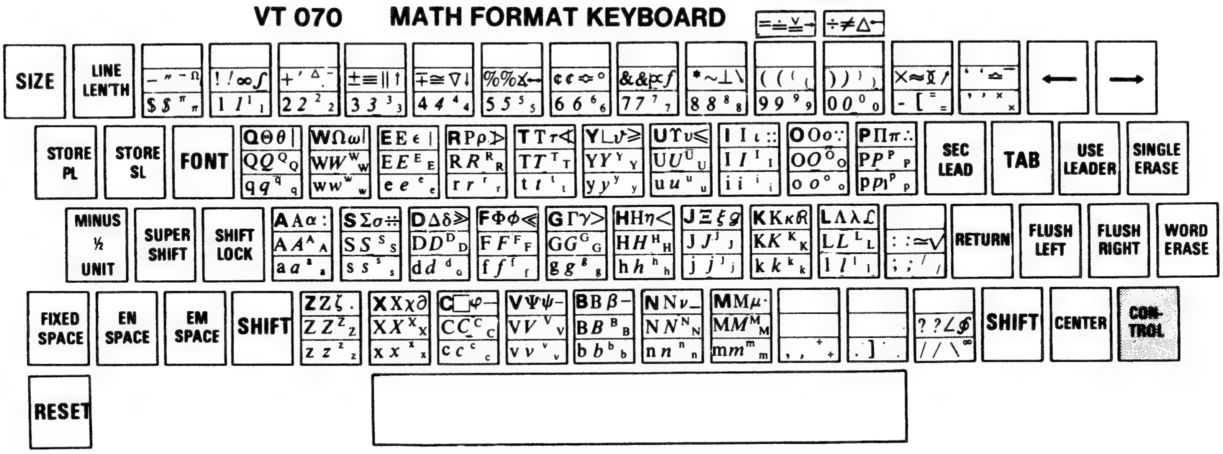
COMP/SET 500/510 PHOTOTYPESETTER

Catalog Format Keyboard


Control
SIZE
LINE LEN'TH
$ 1 2 3 4 5 6 7 8 9 0
! _ ' " % ¢ & * ( )
STORE PL
STORE SL
FONT
Q W E R T Y U I O P
SEC LEAD
TAB
USE LEADER
SINGLE ERASE
MINUS ½ UNIT
SUPER SHIFT
SHIFT LOCK
A S B F G H J K L
RETURN
FLUSH LEFT
FLUSH RIGHT
WORD ERASE
FIXED SPACE
EN SPACE
EM SPACE
SHIFT
Z X C V D N M
SHIFT
CENTER
CON-TROL
RESET

COMP/SET

VT 070 MATH FORMAT KEYBOARD


CONTROL
SIZE
LINE LEN'TH
STORE PL
STORE SL
FONT
SEC LEAD
TAB
USE LEADER
SINGLE ERASE
MINUS ½ UNIT
SUPER SHIFT
SHIFT LOCK
RETURN
FLUSH LEFT
FLUSH RIGHT
WORD ERASE
FIXED SPACE
EN SPACE
EM SPACE
SHIFT
SHIFT
CENTER
CON-TROL
RESET

Comp/Set Phototypesetter Line Length Chart

LL Picas	5½ Pt.	6 Pt.	7 Pt.	8 Pt.	8½ Pt.	9 Pt.	10 Pt.	11 Pt.	12 Pt.	13 Pt.	14 Pt.	15 Pt.	16 Pt.	17 Pt.	18 Pt.	24 Pt.	30 Pt.	36 Pt.	48 Pt.	54 Pt.	60 Pt.	72 Pt.	74 Pt.	LL Picas
½	0019	0018	0015	0013	0012	0012	0010	0009	0009	0008	0007	0007	0006	0006	0006	0004	0003	0003	0002	0002	0001	0001	0001	½
1	0039	0036	0030	0027	0025	0024	0021	0019	0018	0016	0015	0014	0013	0012	0012	0009	0007	0006	0004	0004	0003	0003	0002	1
1½	0059	0054	0046	0040	0038	0036	0032	0029	0027	0024	0023	0021	0020	0019	0018	0013	0010	0009	0006	0006	0005	0004	0004	1½
2	0078	0072	0061	0054	0050	0048	0043	0039	0036	0033	0030	0028	0027	0025	0024	0018	0014	0012	0009	0008	0007	0006	0005	2
2½	0098	0090	0077	0067	0063	0060	0054	0049	0045	0041	0038	0036	0033	0031	0030	0022	0018	0015	0011	0010	0009	0007	0007	2½
3	0118	0108	0092	0081	0076	0072	0064	0059	0054	0049	0046	0043	0040	0038	0036	0027	0021	0018	0013	0012	0010	0009	0008	3
3½	0137	0126	0108	0094	0089	0084	0075	0068	0063	0058	0054	0050	0047	0044	0042	0031	0025	0021	0015	0014	0012	0010	0010	3½
4	0157	0144	0123	0108	0101	0096	0086	0078	0072	0066	0061	0057	0054	0050	0048	0036	0028	0024	0018	0016	0014	0012	0011	4
4½	0177	0162	0139	0121	0114	0108	0097	0088	0081	0074	0069	0064	0060	0057	0054	0040	0032	0027	0020	0018	0016	0013	0013	4½
5	0196	0180	0154	0135	0127	0120	0108	0098	0090	0083	0077	0072	0067	0063	0060	0045	0036	0030	0022	0020	0018	0015	0014	5
5½	0216	0198	0170	0148	0140	0132	0119	0108	0099	0091	0085	0079	0074	0070	0066	0049	0039	0033	0024	0022	0019	0016	0016	5½
6	0236	0216	0185	0162	0152	0144	0129	0118	0108	0099	0092	0086	0081	0076	0072	0054	0043	0036	0027	0024	0021	0018	0017	6
6½	0255	0234	0200	0175	0165	0156	0140	0127	0117	0108	0100	0093	0087	0082	0078	0058	0046	0039	0029	0026	0023	0019	0019	6½
7	0275	0252	0216	0189	0178	0168	0151	0137	0126	0116	0108	0100	0094	0089	0084	0063	0050	0042	0031	0028	0025	0021	0020	7
7½	0295	0270	0231	0202	0190	0180	0162	0147	0135	0124	0115	0108	0101	0095	0090	0067	0054	0045	0033	0030	0027	0022	0021	7½
8	0314	0288	0247	0216	0203	0192	0173	0157	0144	0133	0123	0115	0108	0101	0096	0072	0057	0048	0036	0032	0028	0024	0023	8
8½	0334	0306	0262	0229	0216	0204	0183	0167	0153	0141	0131	0122	0114	0108	0102	0076	0061	0051	0038	0034	0030	0025	0024	8½
9	0354	0324	0278	0243	0229	0216	0194	0177	0162	0149	0139	0129	0121	0114	0108	0081	0064	0054	0040	0036	0032	0027	0026	9
9½	0373	0342	0293	0256	0241	0228	0205	0186	0171	0158	0146	0137	0128	0120	0114	0085	0068	0057	0042	0038	0034	0028	0027	9½
10	0393	0360	0309	0270	0254	0240	0216	0196	0180	0166	0154	0144	0135	0127	0120	0090	0072	0060	0045	0040	0036	0030	0029	10
10½	0413	0378	0324	0284	0267	0252	0227	0206	0189	0174	0162	0151	0142	0133	0126	0094	0075	0063	0047	0042	0037	0031	0030	10½
11	0432	0396	0340	0297	0280	0264	0238	0216	0198	0183	0170	0158	0148	0140	0132	0099	0079	0066	0049	0044	0039	0033	0032	11
11½	0452	0414	0355	0311	0292	0276	0248	0226	0207	0191	0177	0165	0155	0146	0138	0103	0082	0069	0051	0046	0041	0034	0033	11½
12	0472	0432	0370	0324	0305	0288	0259	0236	0216	0199	0185	0173	0162	0152	0144	0108	0086	0072	0054	0048	0043	0036	0035	12
12½	0491	0450	0386	0338	0318	0300	0270	0245	0225	0208	0193	0180	0169	0159	0150	0112	0090	0075	0056	0050	0045	0037	0036	12½
13	0511	0468	0401	0351	0330	0312	0281	0255	0234	0216	0200	0187	0175	0165	0156	0117	0093	0078	0058	0052	0046	0039	0038	13
13½	0531	0486	0417	0365	0343	0324	0292	0265	0243	0224	0208	0194	0182	0171	0162	0121	0097	0081	0060	0054	0048	0040	0039	13½
14	0550	0504	0432	0378	0356	0336	0302	0275	0252	0233	0216	0201	0189	0178	0168	0126	0100	0084	0063	0056	0050	0042	0040	14
14½	0570	0522	0448	0392	0369	0348	0313	0285	0261	0241	0224	0209	0196	0184	0174	0130	0104	0087	0065	0058	0052	0043	0042	14½
15	0590	0540	0463	0405	0381	0360	0324	0295	0270	0249	0231	0216	0202	0190	0180	0135	0108	0090	0067	0060	0054	0045	0043	15
15½	0609	0559	0479	0419	0394	0372	0335	0304	0279	0258	0239	0223	0209	0197	0186	0139	0111	0093	0069	0062	0055	0046	0045	15½
16	0629	0577	0494	0432	0407	0384	0346	0314	0288	0266	0247	0230	0216	0203	0192	0144	0115	0096	0072	0064	0057	0048	0046	16
16½	0649	0595	0510	0446	0420	0396	0357	0324	0297	0274	0255	0238	0223	0210	0198	0148	0119	0099	0074	0066	0059	0049	0048	16½
17	0668	0613	0525	0459	0432	0408	0367	0334	0306	0282	0262	0245	0229	0216	0204	0153	0122	0102	0076	0068	0061	0051	0049	17
17½	0688	0631	0540	0473	0445	0420	0378	0344	0315	0291	0270	0252	0236	0222	0210	0157	0126	0105	0078	0070	0063	0052	0051	17½
18	0708	0649	0556	0486	0458	0432	0389	0354	0324	0299	0278	0259	0243	0229	0216	0162	0129	0108	0081	0072	0064	0054	0052	18
18½	0727	0667	0571	0500	0470	0444	0400	0363	0333	0307	0285	0266	0250	0235	0222	0166	0133	0111	0083	0074	0066	0055	0054	18½
19	0747	0685	0587	0513	0483	0456	0411	0373	0342	0316	0293	0274	0256	0241	0228	0171	0137	0114	0085	0076	0068	0057	0055	19
19½	0767	0703	0602	0527	0496	0468	0421	0383	0351	0324	0301	0281	0263	0248	0234	0175	0140	0117	0087	0078	0070	0058	0057	19½
20	0786	0721	0618	0540	0509	0480	0432	0393	0360	0332	0309	0288	0270	0254	0240	0180	0144	0120	0090	0080	0072	0060	0058	20
20½	0806	0739	0633	0554	0521	0492	0443	0403	0369	0341	0316	0295	0277	0260	0246	0184	0147	0123	0092	0082	0073	0061	0059	20½
21	0826	0757	0649	0568	0534	0504	0454	0413	0378	0349	0324	0302	0284	0267	0252	0189	0151	0126	0094	0084	0075	0063	0061	21
21½	0845	0775	0664	0581	0547	0516	0465	0422	0387	0357	0332	0310	0290	0273	0258	0193	0155	0129	0096	0086	0077	0064	0062	21½
22	0865	0793	0680	0595	0560	0528	0476	0432	0396	0366	0340	0317	0297	0280	0264	0198	0158	0132	0099	0088	0079	0066	0064	22

Comp/Set Phototypesetter Line Length Chart

LL Picas	5½ Pt.	6 Pt.	7 Pt.	8 Pt.	8½ Pt.	9 Pt.	10 Pt.	11 Pt.	12 Pt.	13 Pt.	14 Pt.	15 Pt.	16 Pt.	17 Pt.	18 Pt.	24 Pt.	30 Pt.	36 Pt.	48 Pt.	54 Pt.	60 Pt.	72 Pt.	74 Pt.	LL Picas
22½	0885	0811	0695	0608	0572	0540	0486	0442	0405	0374	0347	0324	0304	0286	0270	0202	0162	0135	0101	0900	0081	0067	0065	22½
23	0904	0829	0710	0622	0585	0552	0497	0452	0414	0382	0355	0331	0311	0292	0276	0207	0165	0138	0103	0092	0082	0069	0069	23
23½	0924	0847	0726	0635	0598	0565	0508	0462	0423	0391	0363	0339	0317	0299	0282	0211	0169	0141	0105	0094	0084	0070	0068	23½
24	0944	0865	0741	0649	0610	0577	0519	0472	0432	0399	0370	0346	0324	0305	0288	0216	0173	0144	0108	0096	0086	0072	0070	24
24½	0963	0883	0757	0662	0623	0589	0530	0481	0441	0407	0378	0353	0331	0311	0294	0220	0176	0147	0110	0098	0088	0073	0071	24½
25	0983	0901	0772	0676	0636	0601	0540	0491	0450	0416	0386	0360	0338	0318	0300	0225	0180	0150	0112	0100	0090	0075	0073	25
25½	1003	0919	0788	0689	0649	0613	0551	0501	0459	0424	0394	0367	0344	0324	0306	0229	0183	0153	0114	0102	0091	0076	0074	25½
26	1022	0937	0803	0703	0661	0625	0562	0511	0468	0432	0401	0375	0351	0330	0312	0234	0187	0156	0117	0104	0093	0078	0076	26
26½	1042	0955	0819	0716	0674	0637	0573	0621	0477	0441	0409	0382	0358	0337	0318	0238	0191	0159	0119	0106	0095	0079	0077	26½
27	1062	0973	0834	0730	0687	0649	0584	0531	0486	0449	0417	0389	0365	0343	0324	0243	0194	0162	0121	0108	0097	0081	0078	27
27½	1081	0991	0850	0743	0700	0661	0595	0540	0495	0457	0425	0396	0371	0350	0330	0247	0198	0165	0123	0110	0099	0082	0080	27½
28	1101	1009	0865	0757	0712	0673	0605	0550	0504	0466	0432	0403	0378	0356	0336	0252	0201	0168	0126	0112	0100	0084	0081	28
28½	1121	1027	0880	0770	0725	0685	0616	0560	0513	0474	0440	0411	0385	0362	0342	0256	0205	0171	0128	0114	0102	0085	0083	28½
29	1140	1045	0896	0784	0738	0697	0627	0570	0522	0482	0448	0418	0392	0369	0348	0261	0209	0174	0130	0116	0104	0087	0084	29
29½	1160	1063	0911	0797	0750	0709	0638	0580	0531	0491	0455	0425	0398	0375	0354	0265	0212	0177	0132	0118	0106	0088	0086	29½
30	1180	1081	0927	0811	0763	0721	0649	0590	0540	0499	0463	0432	0405	0381	0360	0270	0216	0180	0135	0120	0108	0090	0087	30
30½	1199	1099	0942	0824	0776	0733	0659	0599	0549	0507	0471	0439	0412	0388	0366	0274	0219	0183	0137	0122	0109	0091	0089	30½
31	1219	1117	0958	0838	0789	0745	0670	0609	0558	0515	0479	0447	0419	0394	0372	0279	0223	0186	0139	0124	0111	0093	0090	31
31½	1239	1136	0973	0852	0801	0757	0681	0619	0568	0524	0486	0454	0426	0400	0378	0284	0227	0189	0142	0126	0113	0094	0092	31½
32	1258	1154	0989	0865	0814	0769	0692	0629	0577	0532	0494	0461	0432	0407	0384	0288	0230	0192	0144	0128	0115	0096	0093	32
32½	1278	1172	1004	0879	0827	0781	0703	0639	0586	0540	0502	0468	0439	0413	0390	0293	0234	0195	0146	0130	0117	0097	0095	32½
33	1298	1190	1020	0892	0840	0793	0714	0649	0595	0549	0510	0476	0446	0420	0396	0297	0238	0198	0148	0132	0119	0099	0096	33
33½	1317	1208	1035	0906	0852	0805	0724	0658	0604	0557	0517	0483	0453	0426	0402	0302	0241	0201	0151	0134	0120	0100	0097	33½
34	1337	1226	1051	0919	0865	0817	0735	0668	0613	0565	0525	0490	0459	0432	0408	0306	0245	0204	0153	0136	0122	0102	0099	34
34½	1357	1244	1066	0933	0878	0829	0746	0678	0622	0574	0533	0497	0466	0439	0414	0311	0248	0207	0155	0138	0124	0103	0100	34½
35	1376	1262	1081	0946	0890	0841	0757	0688	0631	0582	0540	0504	0473	0445	0420	0315	0252	0210	0157	0140	0126	0105	0102	35
35½	1396	1280	1097	0960	0903	0853	0768	0698	0640	0590	0548	0512	0480	0451	0426	0320	0256	0213	0160	0142	0128	0106	0103	35½
36	1416	1298	1112	0973	0916	0865	0778	0708	0649	0599	0556	0519	0486	0458	0432	0324	0259	0216	0162	0144	0129	0108	0105	36
36½	1435	1316	1128	0987	0929	0877	0789	0717	0658	0607	0564	0526	0493	0464	0438	0329	0263	0219	0164	0146	0131	0109	0106	36½
37	1455	1334	1143	1000	0941	0889	0800	0727	0667	0615	0571	0533	0500	0470	0444	0333	0266	0222	0166	0148	0133	0111	0108	37
37½	1475	1352	1159	1014	0954	0901	0811	0737	0676	0624	0579	0540	0507	0477	0450	0338	0270	0225	0169	0150	0135	0112	0109	37½
38	1495	1370	1174	1027	0967	0913	0822	0747	0685	0632	0587	0548	0513	0483	0456	0342	0274	0228	0171	0152	0137	0114	0111	38
38½	1514	1388	1190	1041	0980	0925	0833	0757	0694	0640	0595	0555	0520	0490	0462	0347	0277	0231	0173	0154	0138	0115	0112	38½
39	1534	1406	1205	1054	0992	0937	0843	0767	0703	0649	0602	0562	0527	0496	0468	0351	0281	0234	0175	0156	0140	0117	0114	39
39½	1554	1424	1221	1068	1005	0949	0854	0777	0712	0657	0610	0569	0534	0502	0474	0356	0284	0237	0178	0158	0142	0118	0115	39½
40	1573	1442	1236	1081	1018	0961	0865	0786	0721	0665	0618	0577	0540	0509	0480	0360	0288	0240	0180	0160	0144	0120	0116	40
40½	1593	1460	1251	1095	1030	0973	0876	0796	0730	0674	0625	0584	0547	0515	0486	0365	0292	0243	0182	0162	0146	0121	0118	40½
41	1613	1478	1267	1108	1043	0985	0887	0806	0739	0682	0633	0591	0554	0521	0492	0369	0295	0246	0184	0164	0147	0123	0119	41
41½	1632	1496	1282	1122	1056	0997	0897	0816	0748	0690	0641	0598	0561	0528	0498	0374	0299	0249	0187	0166	0149	0124	0121	41½
42	1652	1514	1298	1136	1069	1009	0908	0826	0757	0699	0649	0605	0568	0534	0504	0378	0302	0252	0189	0168	0151	0126	0122	42
42½	1672	1532	1313	1149	1081	1021	0919	0836	0766	0707	0656	0613	0574	0540	0510	0383	0306	0255	0191	0170	0153	0127	0124	42½
43	1691	1550	1329	1163	1094	1033	0930	0845	0775	0715	0664	0620	0581	0547	0516	0387	0310	0258	0193	0172	0155	0129	0125	43
43½	1711	1568	1344	1176	1107	1045	0941	0855	0784	0724	0672	0627	0588	0553	0522	0392	0313	0261	0196	0174	0156	0130	0127	43½
44	1731	1586	1360	1190	1120	1057	0952	0865	0793	0732	0680	0634	0595	0560	0528	0396	0317	0264	0198	0176	0158	0132	0128	44
44½	1750	1604	1375	1203	1132	1069	0962	0875	0802	0740	0687	0641	0601	0566	0534	0401	0320	0267	0200	0178	0160	0133	0130	44½
45	1770	1622	1391	1217	1145	1081	0973	0885	0811	0749	0695	0649	0608	0572	0540	0405	0324	0270	0202	0180	0162	0135	0131	45

Date Received

Comp/Set Layout Form

Date Due

Job Title

Operator

Disc No.

Format

Jsp. Min. / Max.

Lsp.

Ldr. / Width

Fixed Space

	Size	Font	Line Length	Primary Leading	Secondary Leading	Mode		Other Information
						A	M	

If checked ☐ see additional information on reverse side **Page ____ of ____**

FORM VT2955 – 4/75

®
ADDRESSOGRAPH MULTIGRAPH
VARITYPER DIVISION
11 MT. PLEASANT AVENUE • EAST HANOVER, NEW JERSEY 07936